California State Auditor

BUREAU OF STATE AUDITS

California State University:

Its Common Management System Has Higher Than Reported Costs, Less Than Optimal Functionality, and Questionable Procurement and Conflict-of-Interest Practices

March 2003
2002-110

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CALIFORNIA STATE AUDITOR

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March 11, 2003 2002-110

The Governor of California
President pro Tempore of the Senate
Speaker of the Assembly
State Capitol
Sacramento, California 95814

Dear Governor and Legislative Leaders:

As requested by the Joint Legislative Audit Committee, the Bureau of State Audits presents its audit report concerning the California State University's (university) Common Management System (CMS). This report concludes that the university did not establish a business case for CMS by preparing a feasibility study report or other analysis demonstrating that CMS is a worthwhile expenditure of university resources. Further, its previous CMS cost projections have understated the full costs of CMS, most recently projected at $662 million, including $269 million for maintenance and operations, over the now nine-year development and implementation period. Moreover, it has yet to establish a mechanism to adequately monitor overall systemwide CMS costs, nor establish a systemwide funding plan for the project. Additionally, we noted problems that cast doubt on whether CMS will achieve all the objectives the university intended, nor offer what could have been achieved from a systemwide project.

Although the university followed recommended procurement practices to acquire data center services, its procurements for software and consultants raise questions about the fairness and competitiveness of its practices. For example, its solicitation document for the CMS software procurement did not provide for a method to objectively select one winning vendor, and the university could not demonstrate how it resolved evaluation team concerns. Finally, the university did not do enough to prevent or detect apparent conflicts of interest on CMS-related procurements.

Respectfully submitted,

Elaine M. Howle

ELAINE M. HOWLE
State Auditor

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SUMMARY

Audit Highlights . . .

Our review of the California State University's (university) Common Management System (CMS) revealed the following:

- ☑ *The university did not establish a business case for CMS to define its intended benefits and associated costs and ensure that the expenditure of university resources is worthwhile.*
- ☑ *The university's previous cost projections understated the full costs of CMS over its now nine-year project period; these costs—including an estimated $269 million for maintenance and operations—are now expected to total $662 million.*
- ☑ *Problems exist that cast doubt on whether CMS will achieve all the objectives intended, nor offer what could have been achieved from a systemwide project.*

continued on the next page

RESULTS IN BRIEF

With 23 campuses and an annual budget of more than $5.2 billion, the California State University (university) provides a broad education along with undergraduate and graduate instruction for professional and occupational goals to more than 400,000 students each year. Supporting this instruction is a structure for handling numerous administrative details, including the following: student services such as admissions, registration, and grades; human resources activities of processing and paying faculty, classified staff, and student workers; and financial services related to purchasing, billing, inventory, and accounting for funds. To enhance administrative productivity and quality, the university is developing and implementing an administrative software project, the Common Management System (CMS), which is replacing all university finance, human resources, and student administration systems with the PeopleSoft suite of administrative software. The university plans to support this software with one outsourced data center to process all CMS data. One expected benefit of CMS is enabling students to go online to look up admissions status and grades. Recent estimates for the CMS project's total costs are about $662 million—$393 million for one-time costs and $269 million for maintenance and operations—for the nine-year development and implementation period from fiscal year 1998–99 through 2006–07.

The university originally anticipated significant cost savings from its CMS and data center efforts, even believing these savings could fund other information technology initiatives. It now says it did not have cost savings as a primary goal, but expected CMS would avoid or minimize costs for improved and expanded administrative software services over the long term. Regardless of its reasons for pursuing CMS and its supporting data center, the university has not established a business case for the CMS project by preparing a feasibility study report or a similar analysis that clearly defined its intended benefits and associated costs when compared with the pre-CMS environment. In addition, when the university decided to direct a single administrative system at all campuses, it did not evaluate the cost variance in alternatives that allowed for implementation

plans ranging from running one shared copy of the software to running several copies focusing on differing campus needs. Without compelling evidence of its need for new administrative software, or a cost-benefit analysis for the project, the university cannot ensure that the CMS project is a worthwhile expenditure of resources.

☑ ***Although the university followed recommended procurement practices to acquire data center services, its procurements for software and consultants on the project raise questions about the fairness and competitiveness of the university's practices.***

☑ ***The university did not do enough to prevent or detect apparent conflicts of interest on CMS-related procurements.***

When asked why it never conducted a formal return-on-investment analysis on the CMS project, the university explained that the magnitude of potential savings estimated by its consultants, IBM and Pacific Partners Consulting Group (Pacific Partners), led it to believe that such a formal analysis was unnecessary. However, the university cannot rely on its consultants' reports as justification for not developing the business case for CMS because these studies were not intended for such a purpose—as evidenced by their scope. In fact, both studies recommended that the university conduct subsequent cost-benefit analyses before proceeding with the project. Further, although the university may have intended to conduct its own cost-benefit analysis for the CMS project, it never completed one.

Also, the university's stated reasons for CMS, given in its "Why CMS?" document, are insufficient to justify a significant investment without analysis demonstrating that the problems it described were severe or systemic. Further, the university cannot support that most of its campuses were planning to replace prior administrative systems in July 1999 when the decision was made for all campuses to implement CMS. The university's chancellor cites various reasons for pursuing CMS, such as drawing all campuses into a more common set of business practices. However, these reasons are inadequate to forgo documenting the problems being addressed by CMS and the associated costs to fix them. The strategic benefits the chancellor is hoping to achieve come at a significant cost annually; the most recent university estimates indicate it will cost more than $65 million each year to maintain the fully implemented CMS software.

Recent data indicate that the university's 1998 cost projections of $332 million to $400 million and 1999 projection of $440 million for its CMS project understated the project's costs. Because it did not collect actual project cost information from campuses, the university, at our request, expedited a comprehensive cost survey of actual CMS expenditures and projections. This survey revealed that the total project cost for the types of expenses it initially estimated—what the university considers to be "new" costs—now total $482 million.

The $482 million includes maintenance and operations of the data center during the implementation period, but it excludes certain campus project costs the university did not estimate. The university maintains these are not "new" costs. They include $63 million in implementation costs charged to other campus budgets and $117 million related to campus maintenance and operations costs for CMS during the nine-year project period. However, the accuracy of these figures is uncertain given that 73 percent of the projected $662 million in implementation and maintenance and operations costs through fiscal year 2006–07 is estimated.

Additionally, the university has not established a mechanism to monitor overall systemwide project costs adequately, contributing to a lack of complete project cost information for university management and for the Legislature. The university told us it planned to gather cost data from campuses in fall 2002. After we expressed our concern about the incomplete information, the university surveyed campuses in June 2002 for this cost information. Also, the university lacks a systemwide funding plan for the CMS project and, therefore, lacks a full picture of how the project may affect future funding priorities.

Further, we noted problems that cast doubt on whether CMS will achieve all the objectives the university intended, nor offer what could have been achieved from such a systemwide project. Some problems stem from the university's weak efforts early in the planning process. For instance, one business objective was to minimize costs and time to implement and maintain the software. One of the ways the university intended to do this was by limiting modifications to the vendor software to only those needed to meet its business needs. However, the university had no basis to anticipate the modifications it needed to make because, before it purchased the software, it did not sufficiently evaluate its specific business processes to understand which business processes the potential vendors' software products could accommodate and which software products would require modification to meet its business needs. Additionally, it must often continue to reapply these modifications when the vendor software is updated, thus increasing the costs to maintain the CMS software. Further, the university plans to continue to use existing processes for systemwide reports because it did not design CMS to replace these processes. Finally, its piecemeal approach of identifying, procuring, and implementing its own CMS solution did not share risk with vendors and consultants.

Thus, it assumed substantially all the considerable financial and business risk involved in ensuring that the software meets its business needs and is implemented successfully.

Additionally, the CMS software procurement process raises questions about whether the university used a fair and objective competitive process. Originally, the university planned to identify one or more vendors that campuses could select, and its solicitation document did not provide a method to select only one vendor. When it decided late in the process to recommend one software vendor, the university did not use a quantitative scoring process to select objectively between the two finalists and could not demonstrate that it had resolved questions raised by the procurement evaluation teams. After procuring the software, the university and the campuses hired CMS consultants through sole-source contracts that appear to be contrary to its own policy on when such agreements are appropriate. The university also has not required solicitations for offers from various consulting firms under its master agreements. Without such additional offers, the university cannot demonstrate that it procured best-value services.

Unlike these procurements, the university used recommended procurement practices to select the best-value vendor when procuring the outsourced data processing services needed to run CMS. Also, it shared risk with the outsourced data center vendor by establishing contract terms aimed at holding the vendor accountable for meeting preestablished service levels. When it experienced inadequate service from the data center in the early months of the contract, the university used procedures in the contract to help raise services to agreed levels, and recent months show improvements in the levels. However, although it has worked to address its CMS data processing needs, the university only now is starting to address campus CMS data warehousing needs. Data warehousing can provide for optimum data storage and reporting, such as enabling the production of reports that contain historical analysis of university operations. Earlier in the project planning, the university removed data warehousing services from the CMS project scope. It is now revisiting and starting to address campus interest for those services.

Finally, the university did not do enough to ensure that individuals participating in the project's procurement decisions were free from apparent conflicts of interest, casting a shadow on the project. The university did not designate certain university

positions, such as some CMS project directors, as responsible for filing annual forms to disclose economic interests. Also, the university did not provide appropriate guidance to employees to identify potential conflicts. Finally, the university lacks a policy that spells out for employees what constitutes "incompatible activities" and does not require designated employees to receive regular ethics training. Conflicts of interest or incompatible activities could compromise the university's reputation for honest and fair business practices and undermine public confidence in the university's procurement decisions. In fact, we found an employee who appeared to have had a conflict of interest while participating in a CMS procurement, and one employee who possibly may have used nonpublic information to benefit personally.

RECOMMENDATIONS

The university should adopt policies and procedures that require a feasibility study before the acquisition and implementation of significant future information technology projects.

The university should ensure that it monitors systemwide project costs adequately, including establishing a mechanism to collect data on campus costs periodically. Also, it should establish a systemwide funding plan for CMS that includes campuses.

The university should take steps to ensure that it meets its business objectives for the CMS project, including taking action to minimize the costs and time associated with implementing the software. Further, it should determine how it could improve the design of CMS to report systemwide information.

The university also should use recommended practices, such as ensuring that it shares project risk with vendors and using a quantitative evaluation method to select best-value vendors. Further, when procuring information technology systems or software in the future, the university should evaluate its specific business processes against vendor products before procurement, then select vendors that best accommodate the university's specific needs.

Finally, it needs to strengthen its procedures for preventing and detecting potential conflicts of interest for individuals participating in procurement decisions. For example, it should

conduct periodic ethics training for designated employees. Additionally, it should establish an incompatible activities policy that it formally communicates to employees.

AGENCY COMMENTS

The university states that it agrees in nearly all cases with our recommendations but does not agree fully with all the findings of the audit. The university believes the audit recommendations will be beneficial for the continued development and improvement of the CMS effort, and states it has already implemented or begun to implement some of the recommendations and will be acting on the others. ■

INTRODUCTION

BACKGROUND

The California State University's (university) mission is to provide a broad education and undergraduate and graduate instruction for professional and occupational goals. The university's annual budget is more than $5.2 billion. It offers more than 1,800 bachelor's and master's degree programs in 240 subject areas and serves more than 400,000 students annually. Since 1961, the university has awarded about 2 million bachelor's, master's, and joint doctoral degrees. The State vests responsibility for the university in a board of 25 trustees, 19 of whom are appointed by the governor; in turn, the board of trustees (board) appoints the chancellor and the campus presidents. The university's 23 campuses, located throughout the State, vary in student population and annual budget. The San Diego campus reported student enrollment of 34,171 students in the fall of 2001, while the Maritime Academy reported 606 students during this same period. The system's oldest campus was founded in 1857 and became the first public institution of higher education in California, while the 23rd campus was added to the system in 2002.

THE UNIVERSITY'S INTEGRATED TECHNOLOGY STRATEGY PLAN

In January 1993, the university's former chancellor challenged the board and university employees to "do business differently" in using technology to manage the overall university and to instruct students. In response to this challenge, the university developed an Integrated Technology Strategy (ITS) plan that it presented to the board in March 1996. The driving force behind the ITS plan was its belief that student demand for public instruction would be satisfied elsewhere unless the university adopted an information age approach to conducting business.

The university's underlying vision for the ITS plan is that learning can be enhanced by information technologies that address individual learning styles and the unique needs of diverse student groups. As stated in its ITS plan, the university believes these "technologies can increase student access to faculty and information providers and resources by making them available independent of time and place and by reducing or removing the

geographic, economic, and social barriers to learning." Through successfully implementing the ITS plan, the university hopes to achieve an integrated electronic environment that enables all university students, faculty, and staff to communicate with one another and to interact with information resources from anyplace, to anyplace, at any time.

Consistent with the university-commissioned work of IBM in 1996, the university's ITS plan and its associated technology initiatives are aimed at achieving one of four strategic outcomes: excellence in learning and teaching, quality of student experience, administrative productivity and quality, and personal productivity. Table 1 depicts these 11 technology initiatives and their associated strategic outcomes.

TABLE 1

Strategic Goals and Initiatives of the University's ITS Plan

Strategic Goals	Initiative Number	Technology Initiative
Excellence in Learning and Teaching	1	Distributed Learning and Teaching
	2	Centers for Instructional Technology Development
	3	Multimedia Repositories
	4	Library Resources
Quality of Student Experience	5	Student Friendly Services
	6	One Card
Administrative Productivity and Quality	**7***	**Collaborative Management Systems**–subsequently evolved into Common Management System (CMS)
	8*	**Streamlining Information Technology Delivery**—subsequently evolved into the CMS data center effort
	9	Procurement Process Improvement
Personal Productivity	10	Baseline User Hardware, Software Access, Training, and Support
	11	Access Infrastructure

Source: The university's Integrated Technology Strategy (ITS) plan.

* Focus of the audit report.

In keeping with the university's primary vision of improving education through information technology, six of the 11 initiatives under ITS (1-6 in Table 1) aim to improve the university's instruction and student services. The strategic outcomes associated with the remaining five initiatives are split roughly between improving administrative efficiency and

providing the prerequisite technology needed for all initiatives. Because the scope of this audit is limited to a review of the Common Management System (CMS) and its supporting data center, this report discusses initiatives 7 and 8. Additionally, in the next section, we discuss the university's efforts to obtain the prerequisite technology for CMS through initiatives 10 and 11.

THE UNIVERSITY IS WORKING TO ENSURE THAT ALL CAMPUSES HAVE THE PREREQUISITE TECHNOLOGY FOR CMS AND ITS OTHER TECHNOLOGY INITIATIVES

The university reports that it has been working since 1996 toward ensuring that all campuses have the prerequisite technology in place to realize the full benefits of CMS and the remaining ITS technology initiatives. As of November 2002, the university's work in this area (initiatives 10 and 11 in Table 1) was continuing. The university refers collectively to these two initiatives, aimed at increasing personal productivity, as the Technology Infrastructure Initiative (TII).

According to the university's ITS plan, "none of the ITS initiatives can be successfully implemented, nor their goals achieved, without access to robust inter-campus and intra-campus telecommunications infrastructures." In its November 2002 Measures of Success report to the Legislature, the university states that "a major premise of the ITS [plan] is that success of [its] initiatives depends upon the provision of a minimum baseline technical infrastructure of hardware, software and network communications as well as training and support for those who use them. The TII provides the underlying minimum baseline infrastructure for the ITS [plan]."

As of November 2002, none of the 23 campuses had attained the baseline level of technology required for the ITS initiatives. In its November 2002 Measures of Success report to the Legislature, the university reported that no campus met the baseline level of physical infrastructure, access to computer workstations, and training components, but that three campuses met the baseline related to the high-speed network access and access to technical support. However, the university anticipates that the first campus will achieve the full prerequisite level of technology sometime in fiscal year 2002–03, expecting the TII project to conclude in fiscal year 2005–06, a year before CMS will be installed on all campuses.

Although it was not discussed in its annual report to the Legislature, the university projects that the TII project's total cost will exceed $271 million through fiscal year 2005–06. The TII project's senior director states that $26.8 million already has been spent on TII through June 2002. He further indicates that campuses have funded 68 percent of the project's costs through the use of their legislatively approved capital outlay programs, while the chancellor's office has provided the remaining funding through annual allocations from the university's annual support budget. The annual support budget is funded primarily from the State's General Fund.

THE CMS PROJECT UNDER THE UNIVERSITY'S INTEGRATED TECHNOLOGY STRATEGY PLAN

As stated earlier, one strategic outcome of the university's ITS plan is enhanced administrative productivity and quality, which the university hopes to achieve through technology initiatives that redesign administrative support functions to be more effective and cost-efficient. CMS is one such initiative (number 7 in Table 1 on page 8).

The CMS "Target Administrative Environment"

By the year 2006, the chancellor's office and all 23 campuses expect to do the following:

- Perform administrative functions in concert with a common set of administrative "best practices" approaches.
- Support administrative functions (initially including human resources, financial, and student services) with a shared, common suite of applications software.
- Operate the administrative software suite at a shared service center.

Source: The university's "CMS Project Charter."

The CMS project entails replacing all university financial reporting, human resources, and student administration systems with the PeopleSoft suite of administrative software. When the "target administrative environment" is achieved, the university expects to have more unified and efficient administrative systems (see textbox).

The university expects CMS to yield many significant benefits, such as allowing students to look up admission status and grades online, and better enabling faculty to advise students through online information. It also expects CMS to enable each campus to provide all levels of users access to data when they want and in a format that is meaningful to them without having to wait for programming resources to become available to write a program for a special report.

The university issued a request for qualifications (RFQ) to procure software under the CMS initiative in April 1997 and confirmed the selection of the PeopleSoft suite of administrative software in July 1998. After procuring a software license from

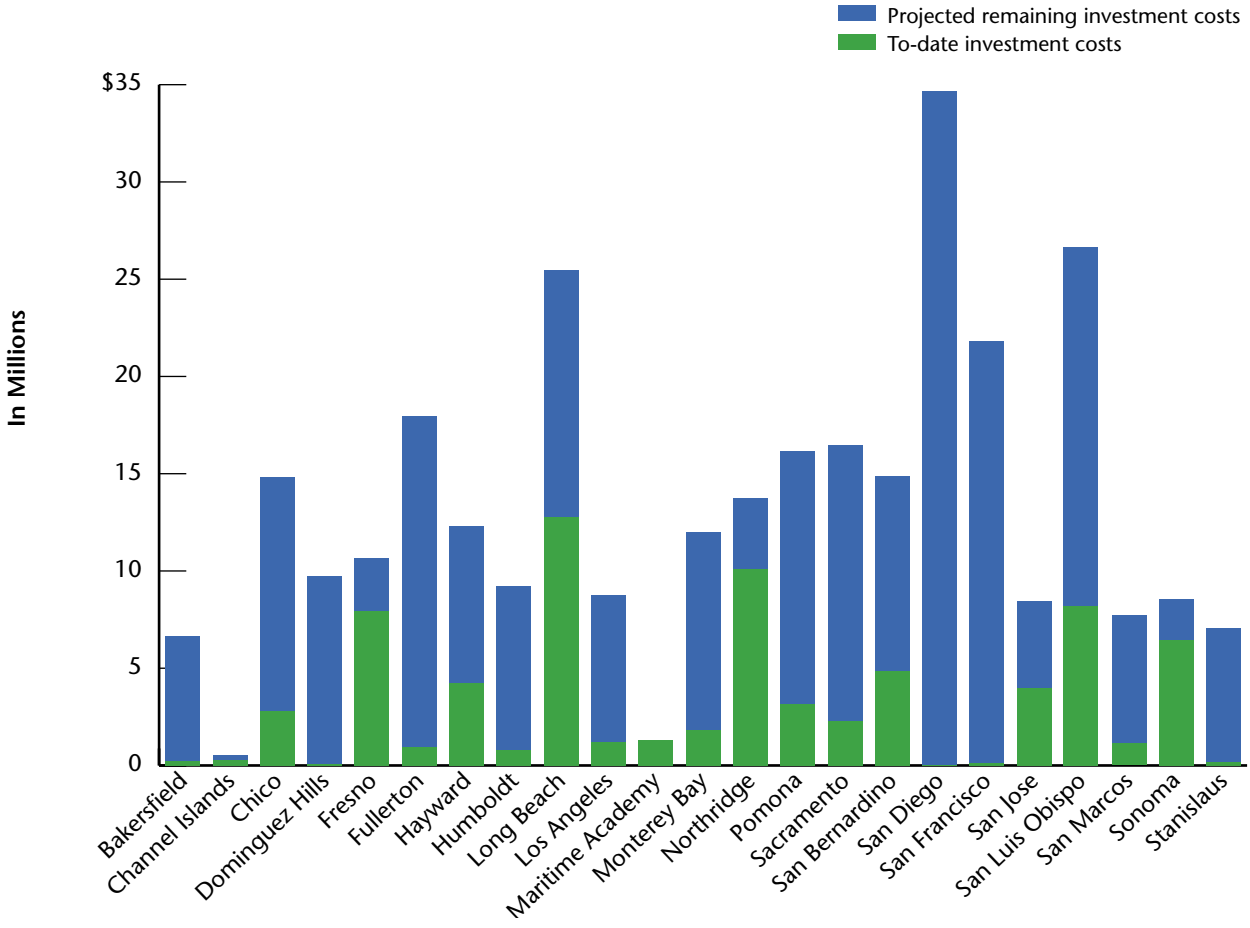
PeopleSoft, the university began modifying this software to meet its specific business needs. PeopleSoft was responsible for initially delivering the software, but not for its successful implementation. Eleven of the university's 23 campuses, collectively known as the "first wave," began implementing CMS in early 2001. According to its December 2002 project timeline, the university expects all campuses to have implemented CMS fully by October 2006. A June 2002 cost survey indicates that total CMS costs, including an estimated $393 million in investment costs and an estimated $269 million in costs for maintenance and operations, will exceed $662 million by the end of fiscal year 2006–07.

The university is implementing CMS through a phased approach. Because campuses have decided to begin implementing CMS at different times, some are further along in this process than others. For example, some campuses are well underway, while one campus will not begin implementation until April 2005. Figure 1 on the following page demonstrates the varying degrees of CMS implementation at all 23 campuses, depicting each campus with its current and projected remaining CMS investment costs as of June 2002. These costs represent campus one-time costs associated with CMS such as implementation, integration, in-kind, and upgrade costs. They are described in more detail in Chapter 2.

Some campuses are delaying implementing CMS for strategic or financial reasons. For example, the Sacramento campus decided to wait to implement CMS so it could learn from the experiences of other campuses. The San Diego campus will not begin to implement CMS until fiscal year 2004–05 to gain maximum value from a new Oracle system purchased before July 1999, when the university decided to implement CMS at all campuses. Even though the university began to procure software for CMS before this time, it had left campus participation in this initiative voluntary. From the initial stages of the initiative until July 1999, the term CMS referred to a "collaborative management system," reflecting that campus participation was voluntary and the university did not expect all campuses to use the same administrative systems. The July 1999 decision to implement CMS at all campuses fundamentally changed the scope of the project, and CMS now refers to a "common management system," indicating the policy of common business practices and their supporting software at all campuses.

FIGURE 1

Campus CMS Implementation Status as of June 2002
Measured by Investment Costs



Source: The university's June 2002 cost survey.

THE CMS DATA CENTER UNDER THE UNIVERSITY'S INTEGRATED TECHNOLOGY STRATEGY PLAN

The university's efforts to establish an outsourced CMS data center under contract to a private company is a major component of the project. The CMS data center, which evolved from the original "streamlining information technology delivery" initiative (number 8 in Table 1 on page 8), falls under the ITS strategic goal of enhancing administrative productivity and quality. Specifically, the university hopes that its outsourced CMS data center will reduce the administrative and hardware costs associated with CMS by maintaining the CMS software and data at a single location.

In April 2000, the university solicited proposals from IBM and Unisys regarding an outsourced data center to host the CMS software and data. The university initially awarded the data center contract to IBM, and it allowed that vendor to begin preparing CMS processing capability at its data center in Rochester, New York, while final negotiations took place. Never able to finalize an agreement with IBM, the university ended negotiations in December 2000, citing significant differences over technical requirements and IBM's proposed price. According to the university's chief of staff for information technology services, the university temporarily expanded its own data center after terminating negotiations with IBM in order to continue CMS development. After successfully negotiating a contract and receiving data center services from Unisys, one of the two original bidders on the contract, the university no longer used this contingency data center for CMS software and data.

In March 2001 the university entered into a contract with Unisys for a data center, which is located in Salt Lake City, Utah. Under the terms of the contract, the university will pay Unisys $60 million through February 2006. In return, Unisys will provide data center services to support the university's CMS software and data.

SCOPE AND METHODOLOGY

The Joint Legislative Audit Committee (audit committee) requested that the Bureau of State Audits review the CMS project. Specifically, the audit committee asked us to identify the initial cost estimates and current projected costs for CMS. Our review of CMS costs included specific areas the audit committee asked us to review, such as system integration costs, consultant costs, data center costs, and the university's funding sources for these related expenditures. Also, the audit committee asked us to identify the university's needs, benefits, and return on investment from CMS and its supporting data center. The audit committee also asked us to review a number of specific areas, including the university's management and oversight for CMS and its supporting data center; the university's process to select the software, hardware, and consultants contributing to the CMS project; and how implementation has affected growth in employee positions and workload.

As part of our review of CMS project costs, we identified the university's initial and subsequent total cost estimates and interviewed university personnel to understand their methodology and assumptions for preparing these figures. Early in our audit, we learned that campus costs were only estimated, with actual campus cost data not kept centrally. Our inquiries prompted the university to prepare a cost survey to capture current and projected campus expenditures for the CMS project. We provided input during the preparation of the survey to ensure that the university collected sufficient information on specific areas we were asked to review, such as system integration and consultant costs. After reviewing the expenditures reported in this survey, we issued a follow-up survey to collect funding information for the expenditures previously reported. To assure that the survey responses were reasonably accurate, we visited the chancellor's office and two campuses—Long Beach and Sonoma—to identify and verify selected project costs in more detail.

To understand the university's business need for CMS and its supporting data center, we interviewed university personnel to identify and obtain all studies and analyses supporting the existence of such need. We confirmed our understanding of the studies with university personnel and, when feasible, obtained clarification from the university's consultants who originally performed these analyses. We surveyed each campus president to determine whether their support of CMS was based on campus-specific business needs, whether the campus completed the university's optional campus financial planning tool, and whether the campus had analyses supporting a conclusion that a data center was the most cost-effective approach to implementing CMS. Our review of the university's business need for CMS also involved comparing the university's justification of the project to how other state departments are required to justify similar information technology (IT) projects. In addition, we asked the university for all benefit and return-on-investment calculations it had conducted before proceeding with the CMS project.

To review the university's management and oversight for the CMS project, we reviewed a report from the Legislative Analyst's Office that identified IT recommended practices. In addition to the identified practices, we considered those included in requirements for other state agencies, the Project Management Body of Knowledge (PMBOK), and the Control Objectives for Information and related Technology (COBIT). Based on interviews with university staff and a review of various

project documents, we then reviewed how well the university managed its CMS and supporting data center in accordance with the identified recommenced practices. We also evaluated whether the CMS project was on track to achieve the university's key business objectives. Finally, we reviewed the university's management of its CMS data center, including its handling of problems.

To evaluate the university's process to select the software, hardware, and consultants contributing to the CMS project, we reviewed the laws and university policies relevant to the university's IT procurement process. Based on our review of the laws, we identified the university's procurement responsibilities and the extent to which it is statutorily exempt from state law and oversight. Our review of university IT procurement policies also involved comparing these policies to industry recommended practices and state policies. To determine if the university followed its own procurement policies and industry recommended practices, we selected software, hardware, and consultant agreements related to the CMS initiative at the chancellor's office and three campuses—Fresno, Long Beach, and Sonoma. The review of these agreements included various factors such as determining the procurement method used and evaluating it against the university's policies and practices.

To identify potential conflicts of interest, we also reviewed statement of economic interests forms of individuals playing key roles in CMS and its supporting data center. Based on a review of the CMS project organization chart, and lists of participants contained in procurement documents, we developed a list of individuals directly involved in the university's decision to solicit and award contracts to PeopleSoft, Unisys, and other CMS-related contracts. After developing this list, we attempted to obtain each individual's statement of economic interests forms covering the period of solicitation and award. When our audit uncovered potential conflicts of interest, we obtained details of the facts surrounding the issue and an understanding of what steps the university took to mitigate the potential conflict. If our audit revealed individuals who were not included in the university's conflict-of-interest code, we evaluated their job descriptions for responsibilities that would require inclusion in the code.

Finally, we were asked to determine how project implementation has affected growth in positions and workload at campuses and the chancellor's office. To conduct our analysis, we collected data on full-time-equivalent (FTE) positions from

the chancellor's office and the 11 "first wave" campuses that were furthest along in the project's implementation. The FTE data covered each October from 1997 through 2002 and was separated between IT and non-IT designated employees. In order to ascertain the degree to which any significant FTE growth was attributable to the CMS project, we asked the chancellor's office and the three campuses we visited to explain select FTE increases. The results of our analysis on the CMS project's impact on employee positions appear in Appendix A, along with our discussion of the university's efforts to monitor changes in employee workload attributable to the CMS project. ■

CHAPTER 1

The University Did Not Develop a Business Case for the Common Management System and Its Supporting Data Center

CHAPTER SUMMARY

When it began planning in 1996 for what are now its Common Management System (CMS) and its supporting data center, the California State University (university) anticipated these efforts would yield significant savings that could fund other information technology (IT) initiatives. However, the university's expectations have changed. Today the university maintains that implementing a systemwide suite of administrative software did not have effecting cost savings as a primary goal; rather it was expected that this implementation would result in cost avoidance or minimized cost for improved and expanded administrative software over the long term. Regardless of the university's reasons for pursuing CMS and its supporting data center when planning began in 1996, or its reasons today, the university cannot demonstrate that it documented the extent and severity of problems existing in its prior administrative software or that today's CMS project represents the most cost-effective solution to these problems. Without compelling evidence of a need or requirement for new administrative software, as well as a cost-benefit analysis for the project, the university cannot ensure that the CMS project is a worthwhile expenditure of more than $662 million—an estimated $393 million for one-time costs and an estimated $269 million for maintenance and operations—through fiscal year 2006–07.

If the university implemented a systemwide CMS for the reasons it stated in its "Why CMS?" document—such as "severe problems" with its existing administrative software—then it should have documented the severity and pervasiveness of these problems, as well as conducted a cost-benefit analysis demonstrating that CMS was the most effective solution. On the other hand, if the university implemented a systemwide CMS for other reasons—such as a desire for increased functionality and "anytime/anywhere" access—then it should have stated these objectives explicitly and prepared a cost-benefit analysis that

compared them against detailed projections of the necessary cost. In addition, when the university decided to implement a single administrative system at all campuses, it should have evaluated the cost variance in alternatives that allowed for implementation plans ranging from running one shared copy of the software to running several copies that focused on campus size and needs.

The university said it believed that a formal return-on-investment analysis was unnecessary because of the magnitude of potential savings estimated in studies by its consultants, IBM and Pacific Partners Consulting Group (Pacific Partners). However, the scopes of these studies show they were not intended to establish the business case for CMS and its supporting data center, and both consultants recommended that the university conduct subsequent cost-benefit analyses. Thus, the university cannot rely on either report as a rationale for not developing a business case for CMS. Moreover, the university is implementing CMS and its data center in a manner contrary to the assumptions behind both consultants' savings estimates. For example, the university did not consolidate all campus data center operations for administrative and academic purposes and shut down the existing campus data centers, as assumed in IBM's and Pacific Partners' cost savings estimates. Although the university may have intended to conduct its own cost-benefit analysis for the CMS project, and even developed an assessment tool for this purpose, it ultimately did not use this tool.

The university's stated reasons for CMS are insufficient to justify its significant investment without analysis documenting that the problems with its administrative systems described in its "Why CMS?" document were severe or systemic. Further, the university cannot support that most of its campuses were planning to replace prior administrative systems in July 1999, when the university decided to implement CMS at all campuses. Although the university's chancellor has various reasons for pursuing CMS, such as drawing all campuses into a more common set of business practices, these reasons do not remove the need to document the problems being addressed by CMS, the associated costs to fix them, and the expected cost-efficiencies from common business practices. In addition to the initial implementation costs, the benefits of CMS, as envisioned by the chancellor, come at a significant annual cost. According to the June 2002 cost survey, the university expects to spend $65 million annually to maintain and operate CMS once it is fully implemented in fiscal year 2006–07.

ORIGINALLY ANTICIPATING SIGNIFICANT SAVINGS FROM THE CMS AND DATA CENTER CONSOLIDATION INITIATIVES, THE UNIVERSITY'S EXPECTATIONS FOR BOTH EFFORTS CHANGED

In September 1996, the university's CIO informed the board of trustees that a feasibility study would be done; however, this study was never performed.

Based on a 1996 presentation to its board of trustees (board), the university apparently expected to realize significant savings through CMS, data center consolidation, or both. In a September 1996 meeting, the university's executive director of the integrated technology strategy initiative, currently the chief information officer (CIO), described CMS to the board's committee on technology utilization as an initiative "with the aim of achieving significant cost savings that can be redirected to other information technology investments." At this meeting, the university's current CIO informed the board's committee that "a feasibility study will be done this fall [fall 1996] to identify the costs and timing involved in moving to shared management information software for [university] campuses." However, as described in the following section, this feasibility study was never performed.

The executive vice chancellor and chief financial officer (executive vice chancellor) described the evolution of CMS in an October 2002 letter to us as follows:

> "The projection of significant cost savings was one factor supporting the identification of an [enterprise resource planning system] and data center consolidation as high-priority initiatives in the Integrated Technology Strategy. As the CMS collaborative developed, the CMS task force identified the variety of goals and objectives that formed the basis for the CMS Charter. The CMS Charter does not speak to savings. Rather it points out the objective of achieving efficiencies and minimizing costs. Therefore there was no need to do a stand-alone analysis of potential cost savings."

The executive vice chancellor also clarified the goal of CMS by stating that, "the implementation of a systemwide suite of administrative software did not have effecting savings as a primary goal; rather it was expected that this implementation would result in cost avoidance or minimized costs for improved and expanded administrative software services over the long term."

Whether the objective is described as cost savings, achieving efficiencies or minimizing costs, it is important to document the business case to establish the problem being resolved as well as the expected benefits and the associated costs to achieve those benefits.

THE UNIVERSITY DID NOT ESTABLISH A BUSINESS CASE FOR CMS

An economic analysis of CMS would have forced university executives to evaluate in detail the expected benefits against costs before deciding to invest significant resources in the project.

The university did not establish a business case for CMS by preparing a feasibility study report or a similar analysis that evaluated the need for and the costs and benefits of this new system. Had the university adopted IT procurement policies and procedures that require a feasibility study before procuring IT goods and services, such as CMS, it might have performed an economic analysis of the life-cycle costs and benefits of CMS, comparing these costs with those under its prior administrative systems. Assuming that cost savings was never the university's primary goal for CMS, this analysis still would have had value by forcing executives to evaluate in detail the new efficiencies and functionality of CMS against its projected costs before deciding to invest significant resources. Without a feasibility study, the university lacks persuasive answers to the Legislature's questions about the use of state resources for CMS and its supporting data center.

Chapter 3 of the California Public Contract Code requires state agencies to follow the State Administrative Manual (SAM) when acquiring IT goods and services. To ensure compliance with Chapter 3's intent, the SAM procedures include a need and cost-benefit analysis. According to SAM, a feasibility study "must establish the business case for the investment of state resources in [an IT] project by setting out the reasons for undertaking the project and analyzing its cost and benefits." Further, the SAM indicates that "the scope of the feasibility study must be commensurate with the nature, complexity, risk, and expected cost of the proposed use of information technology." However, under Public Contract Code, Section 12100.5, which is within Chapter 3, the university is exempt from certain state oversight and approval of its IT procurements. The university believes the Public Contract Code further exempts it from following the SAM regarding feasibility study reports, although the statute requires the university to adopt policies and procedures that further the legislative policy expressed in Chapter 3. The university's Policy Manual for Contracting and Procurement, which the university believes furthers the legislative policy of Chapter 3, does not require feasibility studies before IT procurements.

Regardless of the applicability of SAM feasibility study procedures to its own practices, the university would have been in a stronger position to answer legislative and public questions concerning the need for CMS if it had performed a need and cost-benefit analysis consistent with SAM. In a cost-benefit

analysis that mirrored the SAM requirements (see textbox), the university would have described the business problem or opportunity that CMS and its supporting data center were addressing. Also, the university would have had to maintain sufficient documentation supporting the feasibility study to resolve any future questions about the project's intent, justification, nature, and scope. Using the SAM model, the university would have had to clearly define why it was pursuing each initiative: whether cost savings, the replacement of inadequate administrative systems, or other reasons were the "opportunities" being addressed by CMS.

Feasibility Study Requirements Under the State Administrative Manual

- A description of the business problem or opportunity the project is intended to address.
- The project objectives (specifically which significant results must be achieved for the alternatives to be an effective response to the problem or opportunity being addressed).
- A complete description of the IT conditions and capabilities that must exist to satisfy each defined objective.
- A thorough description of the hardware, software, and personnel to be involved in the project.
- A discussion and economic analysis of each of the alternatives considered in the feasibility study, and the reasons for rejecting the alternatives that were not selected.
- An economic analysis of the life cycle costs and benefits of the project and the costs and benefits of the current method of operation during the life cycle of the project.
- The source of funding for the project.
- A detailed project schedule showing key milestones during the project's life.

In addition to quantifying IT savings, a feasibility study would have provided the university with an opportunity to quantify the increased business process efficiencies expected from CMS. Rather than quantify business process savings, the university elects to measure qualitative gains that are not measured easily or compared with costs, such as improved services, while ignoring the costs to achieve and support the services. Conceding the university has not established a quantitative measure of CMS business process efficiencies, such as the cost avoidance generated through manual processes no longer needed because of CMS, the executive vice chancellor indicates such measures cannot be done accurately because values must be assigned to students "not waiting in line" or to employees "not needing to make or receive a phone call" as they did before CMS. However, other indications of efficiency can be measured quantitatively—such as the increased or decreased number of students served by each registrar staff because of CMS. Additional measures might include comparing the number of personnel transactions a human resources analyst can execute in a day before and after CMS.

Though focused on qualitative measures, the university asserts that it has established a method to measure the expected benefits from more efficient systems. According to the executive vice chancellor, the university has established a voluntary quality improvement program that uses performance measures and customer satisfaction surveys as assessment tools. Although it is voluntary and not set up specifically for

A survey of the university staff found that prior administrative systems received higher ratings than the CMS software in each of the three application areas.

measuring business processes as a result of CMS, the program asks participating campuses to contribute information regarding their key processes while students, faculty, and staff assess the services provided. The executive vice chancellor expects customer satisfaction scores to improve with the broad implementation of CMS. However, according to the university's November 2002 Measures of Success report, an annual report to the Legislature describing progress on CMS and other IT projects, a survey of its staff found prior administrative systems received higher satisfaction ratings than PeopleSoft (the CMS software) in each of the three application areas (financial, human resources, and student administration) and across the three performance indicators (response time, ease of use, and quality of information). The survey, which was conducted in the summer of 2002, reflected the responses of 392 individuals who used the CMS financial application, 276 who used the CMS human resources application, and 148 who used the CMS student administration application. Nevertheless, we recognize it is possible that campuses will grow increasingly satisfied with CMS as they become more familiar with it.

Although lacking a framework to measure the cost justification of CMS, the university believes the project is cost-justified, suggesting as much to the Joint Legislative Audit Committee (audit committee). In the university's statement to the audit committee, it cited a projected difference of $50 million in annual costs between its prior administrative systems and estimates of annual CMS costs once fully implemented. In an October 2002 letter to us explaining the university's January 2002 statement to the audit committee, the university's executive vice chancellor wrote the following:

> "The January 2002 statement to the [audit committee] was not an assertion that the [university] would save $50 million with the CMS project. This statement was a response to the question of why a formal [return on investment] was not warranted in 1996. The [university] stated that the projected differences between the estimated annual CMS expenditures of $50 million, once the project was fully implemented, versus the $100 million annual cost reported in the 1996 IBM study led [the university] to conclude that a formal [return on investment] study was not warranted or necessary. The $100 million figure is a rounded total of the costs of the total Administrative Portfolio ($34 million) and Central Computing ($65 million) reported in the IBM study. The $50 million is a cost figure loosely derived from the projected range of potential savings in the IBM study for re-engineering IT delivery ($20 million to $35 million) and Collaborative Administrative systems ($8 million to

> $20 million). This rough savings estimate was further corroborated by the Pacific Partners study that projected a 50 [percent] savings in a fully standardized IT environment. In 1996, staff considered the order of magnitude of the potential savings, rather than a specific savings number. The example of $50 million was used in the initial response to the [audit committee] regarding reasons for no [return on investment] because it gave a clear and representative picture of the thinking in 1996. It has also been stated previously, that [a return on investment] was not necessary based on the fact that the [university] campuses intended to replace and improve administrative systems. The option not [to] replace or improve these systems did not exist making a study of return on investment irrelevant. The projection of significant cost savings was one factor supporting the identification of an [enterprise resource planning system] and data center consolidation as high-priority initiatives in the Integrated Technology Strategy. As the CMS collaborative developed, the CMS task force identified the variety of goals and objectives that formed the basis for the CMS Charter. The CMS Charter does not speak to savings. Rather it points out the objective of achieving efficiencies and minimizing costs. Therefore there was no need to do a stand-alone analysis of potential cost savings."

It is unclear whether the $100 million figure in annual costs cited by the executive vice chancellor reasonably represents the university's true cost to maintain the systems that were replaced by CMS. For example, of the $34 million in cost for the "administrative portfolio," only $25 million relates to the CMS functions of finance, human resources, and student administration. The $9 million difference represents the administrative services of facilities services and development. Additionally, the $65 million in "central computing" is questionable because it attributes all campus central computing costs to supporting the administrative portfolio rather than allocating a proportionate share. However, the survey tool used by IBM to collect this cost information does not indicate whether "central computing" costs includes only administrative support costs rather than both administrative and academic support costs. IBM's analysis of the university's IT expenditures indicates that only 21 percent of campus academic and administrative IT costs related to finance, human resources, and student administration systems. The remaining 79 percent relates to campus non-CMS administrative functions, as well as the academic portfolio of systems used by schools and colleges, libraries, instructional media centers, and others.

It is unclear whether the $100 million cited by the executive vice chancellor reasonably represents the true cost to maintain the systems replaced by CMS.

The president of the San Diego campus described the supportive role of its campus's data center to both academic and administrative systems when he said:

> "Each campus data center has a myriad of other systems that must be supported whether or not the administrative systems are run off-campus. Among these are learning management and other academic systems, campus web servers, 911 systems, cashiering systems, student health systems, calendaring systems, one-card systems, and fax and printer servers. Servicing these systems requires database administrators, operating systems analysts, and operations specialists whose positions and services cannot be eliminated. Running the administrative applications locally, as [the San Diego campus] does currently with Oracle, certainly adds some marginal costs to the local data center."

An alternative analysis indicates that the university would have spent closer to $43 million to maintain the systems replaced by CMS.

An alternative analysis of the data in the IBM study would indicate that these marginal annual costs for systems replaced by CMS would be $43 million rather than $100 million. The $43 million is composed of the $25 million related to the CMS functions of finance ($8 million), human resources ($1 million), and student administration ($16 million), as well as a proportionate share of the total central computing and telecommunications costs ($18 million). Although this $43 million is for fiscal year 1994–95, it is remarkably close to the university's fiscal year 1999–2000 estimate of $42 million in annual pre-CMS costs, presented in the last section of the chapter.

According to the executive vice chancellor, as a result of IBM's and Pacific Partners' savings calculations, as well as the university's belief that the option not to replace and improve administrative systems did not exist, the university believed that a return-on-investment analysis was irrelevant. However, as discussed in the next two sections, neither the IBM study nor the Pacific Partner studies make the business case for CMS and its supporting data center because neither was designed to do so and because the university did not implement these initiatives as envisioned in these studies.

THE UNIVERSITY CANNOT RELY ON THE IBM STUDY AS A BUSINESS CASE FOR CMS

The university has said that an IBM study it commissioned was the key document justifying its need to replace legacy administrative systems. However, the study that the university refers to was not designed to evaluate the existing administrative systems and further did not conclude the university should replace them. Rather, IBM compared the university's existing technology in 1995 with its goal for "anywhere/anytime" electronic access for all university students and employees. Further, IBM's cost savings estimates assume an entirely different implementation strategy than the university ultimately adopted, so the university cannot use the study to justify the CMS project.

In April 1996, IBM presented a report that recommended various technology initiatives, including CMS software and a data center consolidation. IBM describes the CMS initiative as a multi-campus collaboration in the operation and management of administrative software, resulting in savings of $8 million to $20 million that could be redirected to other initiatives. Similarly, IBM said data center consolidation could save $20 million to $35 million. Overall, IBM presented the university with cost savings of $28 million to $55 million annually, money that could help fund other technology initiatives the report recommended. IBM seemed focused on recommending initiatives that could pay for themselves or for other initiatives. In its report, IBM indicates, "due to the significant cost and lack of viable funding sources, the CMS initiative must be closely tied to the benefits from data center consolidation." In other words, IBM was proposing that savings derived from a consolidated data center be used to fund the CMS project, whose savings in turn would help fund the remaining IT initiatives.

The Goals and Objectives of the IBM Study

The IBM study was charged with identifying key existing or new technology initiatives that would do the following:

- Directly or indirectly support the learning and teaching mission.
- Achieve economies of scale through collaborative efforts among campuses; leveraging systemwide resources; and partnerships with external entities.

Source: *Integrated Technology Strategies Initiative: Building the Strategic Information Technology (IT) Plan* by IBM—April 1996.

IBM's purpose in the 1996 study was not to identify and assess the systemwide problems of existing administrative systems. Rather, IBM compared the university's existing technology capabilities to a desired goal for "anywhere/anytime electronic access to information resources for all students, faculty, and staff." IBM concluded that a "significant performance gap" separated the university's current state of technology from its desired state. However, the performance gap

appears to relate primarily to the university's ability to deploy technology in teaching and serving students, not in using technology for administrative purposes. According to IBM's principal consultant on the project, "we built several potential models that varied from one shared copy of the software (requiring only one large programming staff to support it) up to several programming staffs to run several copies that focused on campus size and needs." He further stated that, "the underlying philosophy behind these initiatives [CMS and data center consolidation] was to commoditize these systems [financial reporting, human resources, and student administration systems] and use the savings to improve learning and teaching on the campuses." IBM's report to the university describes CMS as an initiative that "will promote multi-campus cooperation and collaboration in the operation and management of software portfolios, and thereby achieve significant cost efficiencies/savings that can be re-directed to other initiatives." To understand more fully the amount of potential savings expected from the various models, we asked the university for working papers supporting IBM's report, which the principal consultant said were left with the university. However, the university could not locate them.

IBM recognized that the university needed to conduct additional cost-benefit analyses to develop a sound business case for informed decisions regarding CMS.

The university did not implement the ideas on which IBM's cost savings were premised, so it is not reasonable to use IBM's report as the basis for the current CMS project's business case. As discussed in Chapter 3 of our report, the university did not implement one shared copy of the software or several copies that focused on campus size and needs. Also, it did not shut down campus data centers and consolidate all campus computing at consolidated data center(s), as envisioned by IBM. When the university's CIO could not provide us the detailed analysis and assumptions supporting the IBM study, he gave the best description of the relevance of the IBM study to the CMS cost savings: "Since the current CMS project was not directly based on the potential benefits indicated in the IBM study, comparisons to the IBM projections would be nothing more than an interesting look back at historical ideas."

Nevertheless, by the time CMS was conceptualized in 1996, IBM recognized that a cost-benefit study should be conducted. It realized that an additional cost-benefit analysis was needed to help campuses develop a sound business case for informed decisions regarding CMS. Based on CMS task force meeting minutes, it appears that IBM even prepared a CMS feasibility workplan to assist campuses in determining whether participation in CMS, which was voluntary at that

time, was a sound business decision. IBM's proposed cost-benefit analysis recommended identifying annual costs of existing administrative systems over a three-year period, using a comprehensive focus on hardware, software, installation services, modifications, training, and systems maintenance costs. To explain why the university never used IBM's proposed feasibility workplan for CMS, the executive vice chancellor contends that "staff working on the project believed that university and campus staff could best handle the work required to further develop the CMS project."

Although the university states it engaged in significant internal study, it did not prepare a cost-benefit analysis that would make the business case for CMS and its supporting data center.

According to the chancellor, he and the CIO and executive vice chancellor reasoned as follows:

> "[We] determined that additional study was not necessary to support the campus and system belief that a common management system would be beneficial to the university and the corresponding desire of the campuses to develop that system. At the same time, however, with the full support and involvement of the campuses, we engaged in significant internal study and development of the collaborative management and data center consolidation concepts."

However significant the chancellor may believe this internal study was, it did not prepare a need or cost-benefit analysis that would make the business case for CMS and its supporting data center.

THE UNIVERSITY CANNOT RELY ON THE PACIFIC PARTNERS STUDY AS A BUSINESS CASE FOR A CMS DATA CENTER

The university also has cited a 1996 study by Pacific Partners as support for pursuing a CMS data center. However, the Pacific Partners study was not charged with concluding whether a data center that was outsourced, consolidated, or both was the most cost-effective approach to implementing CMS. The scope of this study was limited to identifying the experiences of other organizations that consolidated data centers and applying them to a potential consolidation within the university. As a result, the university's reliance on the Pacific Partners study is misplaced because the university has adopted a form of data center consolidation contrary to the assumptions that support the consultant's savings calculations.

The Purpose and Scope of the Pacific Partners Study

The focus of this study was to survey the field of known data center consolidations to examine the following:

- The issues.
- The benefits.
- The risks.
- The best practices found through the experiences of industry, government, and higher education entities.

Another purpose was to provide benchmarks, decision criteria, and scenarios for evaluating a possible data center consolidation at the university.

Source: *Data Center Consolidation Feasibility Study* by Pacific Partners—November 1996.

The Pacific Partners study tried to determine estimates for potential savings from data center consolidation across the entire university and estimated the university could reasonably expect to save $6 million to $40 million annually, depending on the form of consolidation selected. However, the consultant concluded, "a point estimate of what [the university] might reasonably expect to save is $22 million in on-going savings based on the benchmark data obtained from other institutions and companies and assuming a full consolidation of [university] operations centers and systems support into two centers." The university did not adopt the Pacific Partners' model of consolidating all campus data centers into two data centers. It elected instead to consolidate only the administrative data center operations that are needed to support CMS and outsource the operation of the consolidation, thus leaving the academic and remaining administrative data center functions under the purview of the existing campus data centers.

Although it reported that the university might reasonably expect $22 million in annual savings through campus data center consolidation, Pacific Partners also recognized that the university needed to evaluate data center costs in more detail. Pacific Partners' savings estimates were based on comparisons to various industry benchmarks and relied on university cost data from the prior IBM report. Knowing that its own study did not try to compute the university's specific hardware, software, telecommunications, personnel, and other needs to consolidate data centers, Pacific Partners told the university that one of the most important actions going forward was "a feasibility/implementation study that looked at the full life-cycle costs." Pacific Partners also informed the university that "estimating the savings that might exist throughout the [university] system through data center consolidation is difficult because detailed information for data center expenditures is not available. To do a proper estimate, each facility should be fully examined and fully costed on a life-cycle basis." As stated earlier, the university did not perform such a cost analysis, and the Pacific Partners study did not consider whether a consolidated or outsourced data center was the most cost-effective way to implement CMS. As a result, there is no basis for the university to rely on this study as support for its efforts to establish the CMS data center.

The executive vice chancellor informed us that, "the participating campuses in the CMS effort collectively determined that data center consolidation would be the most effective means to provide the necessary hardware and staffing to serve the CMS data processing requirements." However, when we asked campus presidents whether their campuses had any studies, reports, or similar analyses supporting this determination, they responded that the campus was not involved in this decision or that the campus did participate in this determination, but could not refer us to any studies other than those by IBM and Pacific Partners.

THE UNIVERSITY DID NOT REQUIRE CAMPUSES TO USE THE FINANCIAL ANALYSIS TOOL IT CREATED

The university created its own financial analysis tool that might have helped make the business case for CMS and its supporting data center; however, it did not require the campuses to use this tool, which would have given the university some analysis of cost savings. The chancellor made the following statement about the financial analysis tool:

> "The Collaborative Management Systems Campus Financial Planning Tool . . . was developed to help campuses in their own assessment and decision-making regarding participation in a collaborative system. The CMS Task Force did not direct the use of this document. Participation decisions regarding the use of this tool were campus based and the cost of campus implementation would be borne by campuses individually."

The information from its own financial analysis tool would have yielded important comparative cost data before the university decided to pursue CMS; however, no campus could provide a copy of the completed financial analysis tool.

According to the executive vice chancellor, "The tool was provided to all campuses through distribution of the Agenda for the September 23 (1997) Task Force Meeting." This financial analysis tool seems to be a worthwhile document because it provided a structure for each campus to compare the projected cost of maintaining its current systems for the next five years with the projected cost of installing and maintaining a new system over the next five years. Such a comparison would have allowed the chancellor's office to assess the likelihood of achieving cost savings while also providing campus presidents with important comparative cost data. Such information likely would have proved useful when it was decided in July 1999 to implement CMS systemwide as opposed to allowing campuses to determine their own participation in the CMS project.

However, when we asked each campus if it completed the financial planning tool, and if so to provide us a copy, no campus could give us a copy of its completed form. A couple of campuses indicated that the financial planning tool might have been prepared, but no longer could be located. Others indicated that they prepared various cost analyses, or relied on cost estimates from the chancellor's office for small, medium, and large campuses; however, these campuses did not compare existing system costs with new system costs. Still another said it became moot once a decision was reached that the PeopleSoft-based CMS would be installed at all campuses.

THE UNIVERSITY'S STATED REASONS FOR CMS AND THE DATA CENTER ARE NOT SUFFICIENT TO JUSTIFY THE SIGNIFICANT INVESTMENT WITHOUT MAKING A BUSINESS CASE

Although the university's various reasons for a systemwide CMS have some merit, they do not justify spending $662 million over a nine-year period without establishing a business case.

Rather than establishing a business case, the university has given various reasons for pursuing a systemwide implementation of CMS, including those stated in the university's "Why CMS?" document. In this document, the university asserted that it was headed for "severe" problems with its prior administrative software, so it had to do something. Also, the executive vice chancellor indicated that campuses intended to replace and improve administrative systems anyway, thus making a return-on-investment study irrelevant. In addition, the chancellor says the IBM and Pacific Partners studies validated what the campus presidents already knew: "Improved administrative systems were necessary in the [university] to provide the level and type of services required." Although each reason has some merit, individually and collectively they do not justify spending $662 million over the nine-year project period (an estimated $393 million for one-time costs and an estimated $269 million in maintenance and operations costs) without establishing the business case.

The University Cannot Support That It Had Severe Problems With Its Administrative Systems as Described in Its "Why CMS?" Document

In October 1999, more than a year after it had acquired the software from PeopleSoft, the university explained its reasons for pursuing the project in its "Why CMS?" document. Although identifying general software problems that could reasonably justify analyzing alternatives for software replacement, "Why CMS?" documented neither the severity of the problems nor

Why the University Is Replacing Prior Administrative Systems With CMS

- Prior administrative systems have reached their technical limitations.
- Inability to maintain prior administrative systems and eroding vendor support.
- Interfacing with the state controller's planned new payroll system. *(Note: ultimately, this planned system did not materialize.)*
- University demand for timely and accurate management information marginally met.
- Growing cost of maintaining the prior administrative software.

Source: The university's "Why CMS?" document—October 1999.

their pervasiveness across the campuses. In this document, the university lists software problem areas (see textbox) such as eroding vendor support and increased maintenance costs for systems that reportedly had reached the limits of their technical capabilities.

To understand the university's basis for identifying these severe and systemwide problems, we asked the CIO to explain how these problems were discovered. In response, he indicated that "the systemwide business need for the CMS project was a direct reflection of individual campus needs for improvement and change and that their need was expressed repeatedly by numerous campuses in various committees and task forces throughout the early nineties and before." However, the CIO was unable to identify specific meetings or to provide any documentation to suggest that numerous campuses expressed a desire to replace administrative systems at that time. The university's CIO also was unable to provide any analyses documenting the extent and severity of the problems cited in the "Why CMS?" document.

The University Cannot Support That Most of Its Campuses Were Planning to Replace Administrative Systems in July 1999

The executive vice chancellor informed us that a return-on-investment calculation "was not necessary based on the fact that [university] campuses intended to replace and improve administrative systems. The option not [to] replace or improve those systems did not exist, making a study of return on investment irrelevant." However, the extent to which campuses were intending to replace their software administrative systems is not as clear-cut as the executive vice chancellor suggests. When the university began its software procurement process in April 1997, the request for qualifications (RFQ) it sent to potential bidders indicated that six campuses planned to replace financial reporting systems, six campuses planned to replace human resource systems, and two campuses planned to replace student administration systems. The RFQ indicates specific campuses planning to replace certain administrative systems and names the planned replacements, but it does not mention any other campuses planning to replace systems that had not identified potential replacements.

Many campuses indicated that they had campus-specific wants, needs, or requirements for new administrative software; however, only a few told us they tried to address these before CMS.

We surveyed all campus presidents to determine if they supported the common system because of their specific campus needs in 1999 or for the university's common good. The specific campus responses varied. Many indicated they had campus-specific wants, needs, or requirements for new administrative software, but only a few told us they tried to address campus-specific concerns by soliciting information or proposals from vendors. The response from the Los Angeles campus was consistent in certain respects with various other campuses. In the area of student administration systems, Los Angeles indicated that it was informed that its system no longer would be supported because another vendor bought the vendor that developed its software. Los Angeles was one of nine campuses using this software based on the April 1997 RFQ. Los Angeles did not have a human resource system and relied on the state controller's payroll system for human resource information. It was one of seven campuses in this situation based on the April 1997 RFQ. On the financial side, the campus was running a heavily modified version of a university-developed financial reporting system. According to the Los Angeles campus, the design of this system was based on requirements to meet the chancellor's office's specific needs and systemwide reporting requirements, not local campus needs. All the campuses were running the same university financial reporting system based on the April 1997 RFQ. The critical nature of these shortcomings is unclear because the university indicated to its prospective vendors in 1997 that it was planning to replace so few systems.

The Los Angeles campus differs from most other campuses in three important respects. Unlike the other campuses, the April 1997 RFQ indicated that Los Angeles was the only campus planning to replace all three of its administrative systems at that time. Second, only the Los Angeles campus sent us a feasibility study that presented a business case for software replacement, even though we asked all campus presidents to submit all reports, studies, or similar analyses that led them to conclude that the business needs at their respective campuses were severe enough to warrant replacing existing financial, human resources, and student administration systems. Third, according to the campus president, by the time the university decided all campuses would implement CMS, the campus already had implemented most of a PeopleSoft suite of administrative software, and it was in the process of implementing the student administration application to solve its problems.

Similarly, by the time of the decision, the Fresno, San Marcos, and San Diego campuses already had acquired administrative systems to address their needs. As a result, the need for these campuses to replace their administrative systems is unclear. Further, 19 campuses indicated they had campus-specific wants, needs, or requirements for new administrative software, but only three campus presidents told us they had tried to address campus-specific concerns by soliciting information or proposals from software vendors. This lack of specific action by all but a few campuses does not rule out the possibility of making a business case for the other campuses or for a systemwide implementation. Although undoubtedly, the administrative systems at some campuses would have been replaced, the 1997 RFQ status of planned administrative system replacement, along with the absence of campus feasibility studies and the lack of campuses completing the voluntary September 1997 Collaborative System Financial Planning Tool previously discussed, collectively call into question how seriously most campuses were planning to replace administrative systems by July 1999 when the university decided to install a PeopleSoft-based system at all campuses.

The Chancellor's Reasons For Supporting the Need For CMS Are Not Sufficient to Eliminate the Need to Develop a Business Case

Without cost-benefit or similar feasibility studies, there is insufficient analysis to document the system will accomplish the maximum possible benefit at the least possible cost.

The chancellor believes that one of the most critical factors in CMS's success and value to the university is its ability to draw campuses into more common business practices. He also asserts that CMS will benefit the university through increased economies of scale that will allow it to direct more energy toward its primary mission—education. Common business practices and increased focus on education are undoubtedly worthwhile objectives, but these reasons by themselves do not override the need to establish a business case for CMS by explicitly stating these objectives and performing a cost-benefit study or similar feasibility study report. Without these studies, there is insufficient analysis to document that the system is being installed for the least possible cost to accomplish the maximum possible benefit.

We asked the chancellor to provide us with the specifics behind his belief that "improved administrative systems were necessary in the [university] to provide the level and type of services

required." We asked the chancellor this question to understand his basis for concluding that new systems were required as opposed to wanted. The chancellor replied as follows:

> "'Required' and 'wanted' are synonymous in this context. When faculty, staff, and students want certain functionality or services to be able to teach, support, and learn, then that functionality and service is 'required.' One could certainly argue that faculty, staff, or student wants fall in varying levels of requirements. However, today's wants often become tomorrow's requirements. For example, Internet access to personnel records was a want eight years ago; today it is a requirement for a modern competitive university."

We believe that at some point in the process of making CMS a systemwide project as opposed to a voluntary collaborative, the university should have halted the process and reevaluated the approach for implementing the system. This important decision, which may have been the correct decision, greatly expanded the university's potential to achieve its business objective to "minimize cost to implement and maintain application software." By reevaluating, the university would have had the opportunity to analyze, identify, and manage the least cost implementation systemwide to achieve the maximum benefit systemwide.

At some point in the process of making CMS a systemwide project, the university should have reevaluated the approach for implementing the system.

The chancellor disagreed that at some point in the process of making CMS a systemwide project, as opposed to a voluntary collaborative, the university should have halted the process and reevaluated the rationale for the project. By taking this approach to evaluating the CMS project, he believes we would be missing one of the most critical factors in its success and in the value it has and will bring to the university. The chancellor expresses this value as follows:

> "CMS has helped draw together all campuses in the [university] not only into a common management system, but also into more common management and business practices. We are sharing our expertise and knowledge to collaboratively develop our business practices in all three areas [student administration, financial reporting, and human resources]. The economies of scale in cost and in personnel time that we achieve will allow us to focus our energies on our primary mission, education."

In contrast, we discuss in Chapter 3 how the university is not achieving the maximum functionality from a systemwide implementation, and in Chapter 4 we discuss how its procurement and bidding process was not designed to identify the best-value vendor for a systemwide implementation.

The university currently recognizes the need to show a return on its investment in CMS in terms of better and more efficient administrative practices.

All the university's reasons have some merit. We also appreciate that whether a particular functionality is a requirement or a want is subjective and can change over time. However, none of these reasons is a basis for not making the business case for CMS by documenting the need for new software and performing a cost-benefit study or similar feasibility study report. The university currently recognizes the need to show a return on its investment. As stated in its April 2002 update to the board regarding its information technology strategy, "These projects must begin to show a return on investment in terms of improved environments for learning and teaching and better and more efficient administrative processes." However, absent such an analysis, a judgment cannot be made whether the increased functionality obtained by the new system is worth the additional recurring costs to maintain and operate it. As discussed in the following section, it appears that these recurring costs will exceed similar costs in the pre-CMS environment.

THE UNIVERSITY IS LIKELY TO SPEND MORE, RATHER THAN LESS, TO MAINTAIN AND OPERATE ITS NEW SOFTWARE

Based on a rough comparison of fiscal year 1999–2000 maintenance and operations costs under the pre-CMS environment and the projected costs for the fully implemented CMS in fiscal year 2006–07, it appears the university may spend about $23 million more annually to maintain and operate this new software compared with its pre-CMS environment. We recognize that the CMS software provides campuses with some functionality that did not previously exist. Further, some figures presented in Table 2 on the following page are disputed by the university or represent rough projections of future costs. Finally, the cost comparison does not account for the effects of inflation or university growth. Nevertheless, the comparison raises doubt about the university's ability to achieve one of its stated business objectives for CMS, namely minimized cost to maintain application software.

TABLE 2

Comparison of Annual Maintenance and Operations Costs Between Prior Administrative Systems and CMS

	Actual Pre-CMS Annual Maintenance and Operations Costs (fiscal year 1999–2000)	Projected CMS Annual Maintenance and Operations Costs (fiscal year 2006–07)	Increase (Decrease)
Chancellor's office	$ 1,380,000*	$29,346,376	$27,966,376
Combined campuses	40,340,730†	35,760,740	(4,579,990)
Total annual maintenance and operations costs	**$41,720,730**	**$65,107,116‡**	**$23,386,386**

Source: The university's November 2000 *Measures of Success* report; the university's June 2002 cost survey.

* The director of business management services estimated that the chancellor's office spent this amount supporting administrative systems that were subsequently replaced by CMS.

† This amount only reflects maintenance and operations costs reported by the 22 campuses in existence at the time. Channel Islands' annual maintenance and operations costs are reflected in fiscal year 2006–07, amounting to $73,158. Chancellor's office "campus" costs, representing the cost of maintaining and operating human resources and finance applications at the chancellor's office, are also included in fiscal year 2006–07, amounting to $779,300.

‡ This amount includes the projected ongoing costs to maintain and operate the version of CMS that would exist in fiscal year 2006–07. However, it does not reflect the costs for upgrades or additional development efforts that the CMS software may require in the future.

As Table 2 shows, the university reported to the Legislature in November 2000 that campuses spent approximately $40 million annually to maintain and operate its pre-CMS systems during fiscal year 1999–2000. The university further estimates that the chancellor's office spent more than $1 million in additional costs during this period to maintain and operate its pre-CMS environment, amounting to almost $42 million in pre-CMS systemwide costs. Although the university subsequently has questioned the validity and usefulness of the $40 million it reported to the Legislature in campus pre-CMS costs, that figure is the only information campuses have reported for that time period. This $40 million figure, taken with the chancellor's office costs of more than $1 million, approximates the comparable pre-CMS costs for fiscal year 1994–95 mentioned earlier in our discussion of the IBM study.

The university projects that its annual CMS maintenance and operations costs will exceed $65 million in fiscal year 2006–07. During June 2002, our office surveyed campuses to quantify their to-date and projected expenditures on the CMS project. According to the June 2002 cost survey conducted at the bureau's request, campuses project that CMS maintenance and operations costs will be nearly $36 million annually once fully implemented, almost $5 million less than the pre-CMS environment. However, the chancellor's office will incur $29 million in annual costs to support the new software, which is $28 million more than its costs under the pre-CMS environment. This $29 million is composed of $14 million for support personnel; $8 million in annual payments to Unisys in support of the CMS data center; and $7 million annually for other CMS costs such as consultants, hardware, and software licenses.

RECOMMENDATIONS

To ensure that the university's future IT projects are appropriate expenditures of state resources, the university should adopt policies and procedures that require a feasibility study before the acquisition and implementation of significant IT projects. Such a feasibility study should include at least a clearly defined statement of the business problems or opportunities being addressed by the project, as well as an economic analysis of the project's life-cycle costs and benefits compared with the current method of operation.

To measure the benefits achieved through common management and business practices, the university should establish quantitative measures of increased business process efficiencies through CMS, in addition to any qualitative factors being assessed. Such measures should identify the increased productivity of staff, reduced operational costs, or both. ■

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CHAPTER 2

The University's Project Costs Exceed Initial Estimates, and Cost Monitoring Procedures Are Inadequate

CHAPTER SUMMARY

Recent data indicate that the California State University's (university) earlier estimates understated costs for its Common Management System (CMS) project, both in the 1998 projections of $332 million to $400 million and 1999 projections of $440 million. At the bureau's request, the university conducted a more comprehensive review of actual CMS expenditures and projections in June 2002, including individual campuses' projections of their costs for the project. This June 2002 cost survey revealed that total project costs for the types of expenses the university initially estimated—what it considers to be "new" costs—now total $482 million, which includes the cost for operations and maintenance of the data center during the implementation period. The $482 million excludes costs the university did not estimate related to the project, including $63 million in implementation costs charged to other campus budgets and $117 million in maintenance and operations costs at the campuses during the nine-year development and implementation period. Adding these costs to the university's latest cost estimate brings the CMS total project costs to $662 million for implementation, maintenance, and operations through fiscal year 2006–07. However, the accuracy of these figures is uncertain because 73 percent of the projected $662 million is estimated costs.

The bulk of these projected expenditures are for consulting and university personnel costs, which add up to more than $463 million, or 70 percent of the total project cost. Another major cost is the university's expenditures on the related data center, which, including telecommunications and other costs, is expected to exceed $78 million over the project's nine-year term. About $3.7 million of this is associated with the university's failed contract negotiations with IBM and the need to establish a contingency data center in fiscal year 2000–01.

Contributing to a lack of complete cost information for university management and the public, the university has monitored overall systemwide project costs inadequately since beginning the CMS project in 1998. In a striking lapse, the university lacked actual and projected campus cost information for the project when we began our review, resulting in incomplete public reports of estimated project costs. The university told us it planned to gather cost data from campuses in fall 2002. It subsequently surveyed campuses for this information in June 2002 after we expressed our concern about the incomplete information. Similarly, the university does not have a systemwide funding plan for the CMS project.

RECENT COST PROJECTIONS FOR THE CMS PROJECT EXCEED INITIAL COST ESTIMATES, WHICH DID NOT INCLUDE ALL RELATED COSTS

Nine months after it purchased the PeopleSoft software, the university prepared its first comprehensive CMS cost projection in June 1999.

Updated university cost projections indicate that the amount it expects to spend over the life of the CMS project exceeds the original estimates. Further, additional costs—such as ongoing maintenance and campus employees working on the project while being paid from other campus budgets—should be considered when computing the project's total cost over the nine-year project period. In a January 2002 statement to the Joint Legislative Audit Committee, the university reported that its first "rough" estimate of costs for the CMS project in 1998 totaled $350 million to $400 million over a projected seven-year development and implementation period. The university's chief information officer (CIO) told us this estimate was developed very cursorily to give an overall picture of the project's potential cost, not for decision-making purposes. In fact, we saw no documentation from 1998 related to an estimate of $350 million to $400 million for a seven-year period. However, the university does have documents showing a "preliminary estimate" in December 1998 that projected total costs of $332 million for an eight-year period. Although this estimate indicated that the university was at least starting to consider the cost of implementing CMS at all campuses, the CIO contends that the systemwide project was not defined sufficiently for the university to develop a comprehensive cost projection until mid-1999.

In June 1999, nine months after it purchased the PeopleSoft software, the university prepared what it refers to as its "first comprehensive cost projection" for the CMS project, in which

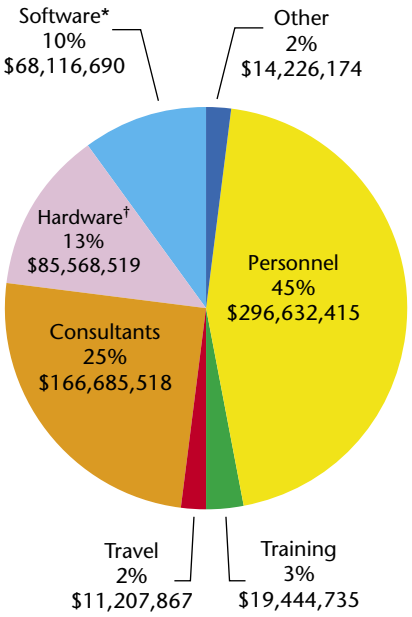
the university's estimate grew to $440 million over a nine-year development and implementation period. This projection documented detailed costs by major types of expenses such as personnel and consultants, estimating centralized development costs of $210 million and campus costs of $230 million. The university based the $230 million campus cost estimate on its average campus cost estimate of $10 million multiplied by 23 campuses (the 22 campuses in existence at the time and the chancellor's office's campus costs). However, recent cost projections from the June 2002 cost survey of the now 23 campuses and the chancellor's office conclude that the university should expect to spend about $662 million on the CMS project, including an estimated $393 million for one-time costs and an estimated $269 million for maintenance and operations costs, by the end of the projected nine-year development and implementation period ending June 2007.

The chancellor's office never tried to gather project cost data from the campuses until June 2002.

Early in the audit, our requests for project cost information prompted the chancellor's office to survey the 23 campuses in June 2002. Until then the chancellor's office had never tried to gather cost data on the project from the campuses, although it told us it planned to do so in fall 2002. In addition to providing a total projected cost of $662 million for the CMS project, the university's 2002 cost survey provided specific information on project costs, such as actual and estimated costs by type of expense such as personnel, training, travel, consultants, hardware, and software. Figure 2 on the following page shows this breakdown of expenses. This survey also provided information by the primary areas of the project such as implementation and maintenance and operations, which we discuss later in the chapter.

FIGURE 2

Projected Total Costs for the CMS Project Including Maintenance and Operations Costs Fiscal Years 1998–99 Through 2006–07



Source: The university's June 2002 cost survey.

* Software costs include PeopleSoft software costs.

† Hardware costs include Unysis data center costs.

In the June 1999 estimate, the university considered only what it termed "new costs." The university's 2002 cost survey highlighted an increase of about $42 million over the June 1999 estimate of $440 million for these kinds of costs. Table 3 shows the increase from the June 1999 cost estimate to those projections recently collected in the June 2002 cost survey, by type of cost, for central costs incurred by the chancellor's office, and for campuses.

TABLE 3

A Comparison of the 1999 and 2002 CMS Project Cost Estimates for the Nine-Year Project Period

Cost Item	June 1999 Cost Estimate	June 2002 Cost Estimate	Estimate Growth or (Shrinkage)
Central Costs:			
Personnel	$ 26,735,486	$ 73,714,004	$46,978,518
Training and Travel		5,144,228	5,144,228
Consultants	70,840,335	31,264,032	(39,576,303)
Hardware	400,000	1,313,555	913,555
Data Center*	75,000,000	75,176,426	176,426
Software		4,126,357	4,126,357
PeopleSoft Software	34,876,961	39,876,812	4,999,851
Other	1,757,000	5,800,515	4,043,515
Central Costs Total	**209,609,782**	**236,415,929**	**26,806,147**
Campus Costs:†			
Personnel	110,400,000	74,374,321	(36,025,679)
Training and Travel	23,575,000	21,869,074	(1,705,926)
Consultants	85,100,000	127,679,650	42,579,650
Hardware and Software	10,925,000	15,214,506	4,289,506
Other		6,236,258	6,236,258
Campus Costs Subtotal	**230,000,000**	**245,373,809**	**15,373,809**
Subtotals	**$439,609,782**	**481,789,738**	**$42,179,956**
Other Campus Costs:‡			
In-Kind		63,378,034	
Maintenance and Operations		116,714,146	
Total Project Costs		**$661,881,918**	

Source: The university's June 1999 implementation approach analysis document and June 2002 cost survey.

* The June 2002 cost estimate for the data center costs include other nonpersonnel costs of $728,683, outsourced data center costs of $70,223,133, and data center related telecommunications costs of $4,224,610.

† For its June 1999 estimate, the university estimated implementation costs of $10 million for one campus and extrapolated to $230 million for 22 campuses plus the chancellor's office "campus" costs. This estimate excluded campus in-kind costs as well as maintenance and operations costs. Further, although upgrade and integration costs are additional or new costs resulting from the CMS project, the university also excluded these from its 1999 estimate.

‡ The campus in-kind and maintenance and operations costs, which are shown separately on this table, are included in the various types of costs, such as personnel, shown in Figure 2. Thus, the individual cost items in Figure 2 and Table 3 are not comparable.

As Table 3 shows, the largest increase in the estimated central project costs, almost $47 million, occurred in personnel costs in the chancellor's office, as staff grew to accommodate the workload involved with modifying the software and providing

support for campuses. Some of this increased personnel cost, according to the university, reflects an effort to move from a consultant-based staff to a university personnel-based staff ahead of schedule. This is reflected in a reduction of the projected consultant cost at the chancellor's office from nearly $71 million in the June 1999 estimate to about $31 million in the June 2002 cost survey. In exactly the opposite pattern, the campuses have seen a drop in the projected university personnel costs while seeing a similar increase in the projected consultant costs. Further, the university reportedly did not consider integration and upgrade costs (discussed later) in its 1999 estimate, although these are additional costs that result from the implementation of CMS. Finally, the university did not consider inflationary or growth factors in its 1999 estimate, which may have contributed to the increase.

A More Complete Picture of What the University Will Spend Includes Other Campus Costs

The university's June 1999 CMS estimate did not include about $180 million in campus costs because its focus was only on new costs.

The June 2002 cost survey revealed two campuses' costs—their maintenance and operations costs and in-kind costs—that the university did not include in its June 1999 estimate because its focus was only on new costs. The university expects to spend more than $63 million for in-kind costs, which represent indirect costs, or costs that are paid from other campus budgets. For example, in-kind costs occur when a manager from the finance department spends a month or more working a majority of the time on "fit-gap" sessions that are necessary for the business process reengineering required by CMS implementation, but the finance department, not the CMS budget, pays for the manager's time. In its June 1999 estimate, the university did not consider in-kind costs because they did not represent a new cost to the university. However, paying CMS bills out of a different budget does not take that expense out of the CMS project's total cost.

Further, the June 2002 cost survey reported that the university expects to spend $117 million in campuses' maintenance and operations costs through fiscal year 2006–07. The university did not consider such costs in its June 1999 estimate, contending that campuses' CMS maintenance and operations costs are not new costs because this type of cost already existed with the existing legacy systems being replaced by the CMS project. However, at the chancellor's office, the maintenance and operations costs were considered in the June 1999 estimate because they represented a cost that did not exist previously. To compute the total cost the university will spend during the project period, we

have included the $117 million in maintenance and operations costs for the campuses to provide the most comprehensive and consistent accounting of the university's costs in terms of personnel, consultants, and other expenses related to the CMS project, which we detail in the remainder of this chapter and the related appendices.

The University's Projected Total Costs Are Subject to Uncertainty, and Campus Cost Projections Vary Widely

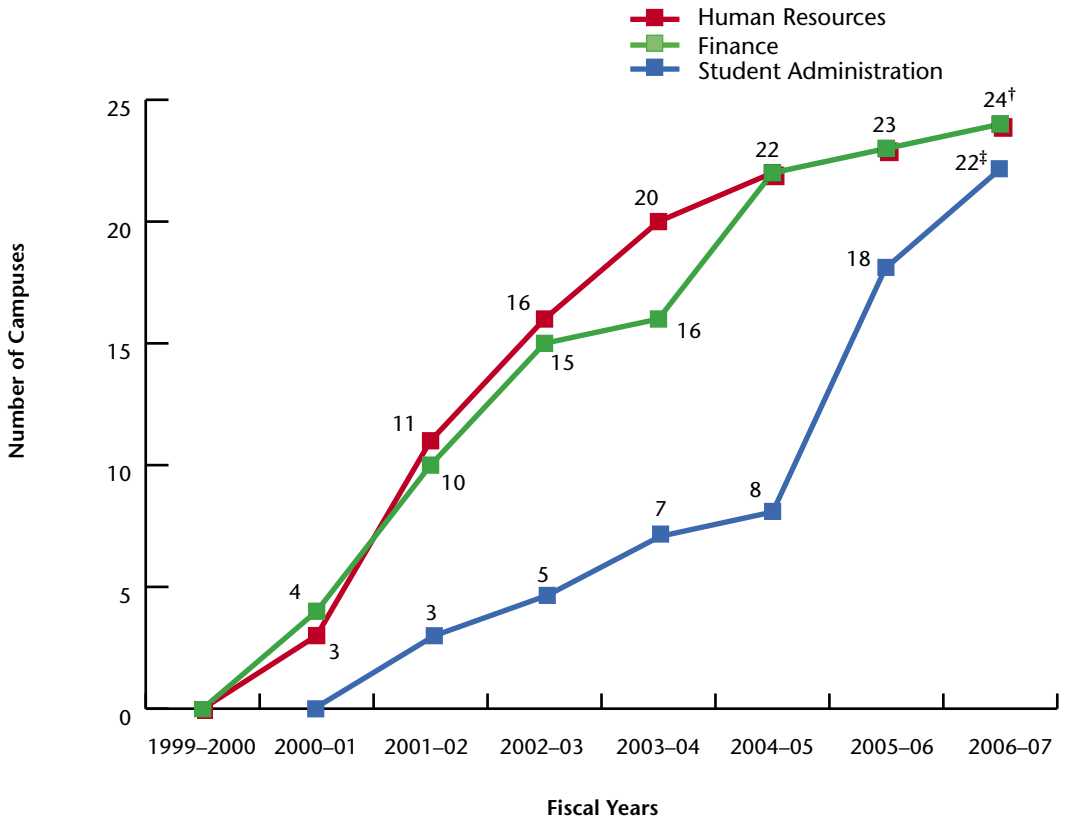
Seventy-three percent of the $662 million in projected total costs for CMS over the nine-year project period represents estimates for future years.

The projected total costs of CMS are uncertain for several reasons, the main ones being that 73 percent of the $662 million total costs are based on estimates for future years and some of these costs, such as in-kind costs, are especially hard to estimate. Most costs are based on estimates because the cost figures for the project cover nine years and there are only four years of actual data included, which accounts for about $176 million out of the $662 million the university expects to spend on the CMS project. The fifth through ninth years are projected costs prepared by each campus and the chancellor's office to estimate what they think their CMS project costs will be during those years. Also, some types of costs are more uncertain than others. For example, the $63 million in in-kind costs discussed in the previous section are particularly rough estimates because the university does not track the hours each employee spends on a given task. In an effort to estimate those costs, campuses were instructed to report only the costs for staff spending more than 50 percent of their time on CMS-related tasks in a given month.

Further, the accuracy of the cost estimates is likely influenced by how far along campuses are in the implementation process. Nearly two-thirds of the reported total costs come from the campuses. Figure 3 on the following page provides an annual snapshot of how many campuses have and will have implemented the three CMS applications each year through fiscal year 2006–07. It does not take into consideration the different versions of each CMS software application a campus will be implementing, but instead counts a campus's initial implementation of a CMS application. As of the end of fiscal year 2001–02, 11 campuses had begun using the human resources application, and 10 had begun using the finance application. The first campuses did not start using the student administration application until fiscal year 2001–02.

FIGURE 3

Number of Campuses "Live"* on CMS by Application



Source: CMS deployment timeline as of December 2002.

* "Live" means a campus has completed testing on at least some functionality of its initial version of the application, and is now using it in the day-to-day operation of the campus.

† Includes all 23 campuses and chancellor's office.

‡ Includes all campuses except Channel Islands.

Also, project costs vary greatly between campuses. For example, the San Diego campus is at the high end with projected costs at almost $37.6 million, and the new Channel Islands campus is at the low end with about $862,000 in projected costs. Although it is reasonable to assume costs differ significantly among campuses for various reasons, such as differences in size, other more unique factors can cause costs to differ. For example, the Channel Islands campus opened just recently, and this may contribute to its lower estimate of costs. Further, it is important to note that some campuses are further along in the implementation process and presumably would have a better understanding of what total actual costs might be. For instance, in September 2002 the Fresno, Sonoma, and California Maritime Academy campuses became the first campuses to have

implemented all three applications. Although they still are planning to implement some upgrades, one might expect the costs they submitted as part of the June 2002 cost survey to be the most complete.

A campus's progress in the implementation process can have another effect on reported costs. Campuses implementing earlier in the nine-year period would report higher maintenance and operations costs than if they had implemented later. For example, Fresno, Sonoma, and California Maritime Academy's reported costs would reflect not only the already incurred implementation costs, but also projections for nearly a full five years of maintenance and operations costs for all three applications until the systemwide project is implemented fully. On the other end of the spectrum, the San Diego campus does not plan to start the implementation process on its first two CMS applications until April 2005 and does not expect to complete implementation of any of its three applications until July 2006. Thus, San Diego's cost projections generally would include less than one year of maintenance and operations costs, so one might expect its costs to be lower than those campuses who were further ahead in the process. In fact, the cost projection reported by the San Diego campus was one of the two highest systemwide. Campus staff indicated that the high cost projections were based partly on the campus's experience with implementing similar systems. Table B.1 in Appendix B shows how much of each campus's total projected costs are for maintenance and operations.

Another factor driving the cost of campus implementation is the differing needs of the campuses. The CMS software is modular by design, allowing for different levels of functionality. This allows each campus to implement only the functionality elements, such as modules, that they believe best meet their needs. However, the flexibility of this approach has other consequences, such as limits on systemwide reporting, which are discussed in Chapter 3.

We found many inconsistencies in the cost information submitted by campuses—not surprising because this was the first time the chancellor's office gathered such information.

Finally, we found many inconsistencies in the June 2002 cost survey submissions, not surprising because this was the first time the chancellor's office gathered project cost data from the campuses. Some campuses continued to report implementation costs for a given application in years after the implementation was complete, while other campuses failed to show costs for the third-party software being used to integrate other campus systems. Sixteen campuses failed to show all costs for their

ongoing maintenance and operations of CMS. One campus listed costs not related to the CMS project. After contacting each campus to discuss the inconsistencies we noted in its survey submission, each campus was given the opportunity to make corrections and resubmit its June 2002 cost survey. Eighteen campuses responded with some changes, but considering that 73 percent of the total project costs are projections, more inaccuracies could exist and more refinement of these estimates is likely to be warranted. Our review also found that reported project costs are understated because, as we discuss in Chapter 5, the university has not included the related CMS data storage and retrieval (data warehousing) costs as a central cost of the project. Further, we noted that only a few campuses included CMS data warehousing costs in the June 2002 cost survey.

OTHER COSTS CONTRIBUTE TO IMPLEMENTATION AND TOTAL PROJECT COSTS

Maintenance and operations costs add $269 million to the total costs during the project's nine-year term.

Of the $662 million, the university projects a total one-time investment of $393 million for the CMS project. Included in this investment total are costs for implementation as well as other costs such as those for upgrading to the most recent version of the software. Ongoing costs of maintaining and operating CMS will add more than $269 million to the total costs during the nine years of systemwide development and implementation.

The university's June 2002 cost survey provided information on the primary project areas. Typically, these areas are implementation and maintenance and operations. However, in part, to disclose the more detailed information required for this audit report, the university further isolated certain costs: integration, in-kind, and upgrade costs. Table 4 displays the total projected costs of the CMS project by these five areas and breaks out the total investment versus the continuing maintenance and operations costs.

TABLE 4

Summary of Projected Total Costs by Project Area
Fiscal Years 1998–99 Through 2006–07

	Cost	Percent of Cost
One-Time Investment Costs		
Implementation	$291,349,354	44.0%
Integration	12,868,156	1.9
In-Kind*	63,433,034	9.6
Upgrade	24,957,016	3.8
Investment Total	392,607,560	59.3
Ongoing Costs		
Maintenance and Operations	269,274,358	40.7
Total†	**$661,881,918**	**100.0%**

Source: The university's June 2002 cost survey.

* The In-Kind costs, which include $55,000 of central costs, have been broken out as follows: Implementation $50,889,187, Integration $4,873,451, and Upgrade $7,670,396.

† Included in the total costs are $83,855,717 in investment costs and $152,560,212 in maintenance and operations costs incurred by the chancellor's office for its "central" efforts on the CMS project. The chancellor's office does not differentiate between investment and maintenance and operations costs when it accounts for its costs. Thus, it allocated its costs between these two areas based on when the campuses begin using each application.

The $662 million total represents both the one-time and the recurring costs that the CMS project has incurred, or is projected to incur, during the nine-year systemwide project development and implementation effort. Campuses reported costs in the following areas:

- Implementation—Costs related to the initial design, development, and implementation of CMS. [Traditionally the definition of these costs covers the entire investment, or the one-time expenditures, in the project cost. However, in part because of the information required for this report, the university separately reported the integration, in-kind, and upgrade costs.]

- Integration—Costs related to the development and implementation of interfaces between the CMS and other existing campus systems such as legacy systems, telephone registration, or other service packages.

The $662 million total represents the cost to achieve and maintain the implemented and planned CMS functionality identified by the campuses during the nine-year systemwide development and implementation effort.

- In-Kind—Costs related to the development and implementation, integration, and upgrade of CMS, but paid from other campus budgets. The university reported costs for staff working on CMS project-related tasks more than 50 percent of the time in a given month, and who are not reported in the CMS campus budget or replaced with staff during the project assignment.

- Upgrade—Costs related to software upgrades and additional development and implementation of functionality elements. This category covers upgrades from the 7.x versions to the 8.x versions of the CMS software and the implementation of additional CMS functionality elements purchased under the PeopleSoft agreement but not provided to the campuses during their initial implementation. [Traditionally, upgrades are considered a recurring cost because software companies continually release new versions of the software that must be modified for systems such as CMS and implemented every few years. However, to compute the cost to achieve the implemented and planned functionality that campuses expect to achieve by the end of fiscal year 2006–07, as displayed in Appendix E, we have reported the cost of campus upgrades to achieve this target functionality as an investment cost.]

- Maintenance and Operations—Costs related to ongoing maintenance and operations once the CMS application is "live" at the campus. A campus generally goes "live" after it completes testing and begins using certain functionality of an application. Maintenance and operations is the recurring cost of the daily operation and support of CMS and includes all the costs of labor for hardware and software maintenance, and other costs related to the daily operation and maintenance of CMS after it is implemented.

University campuses differ in size, needs, organizational structure, and what kind of legacy system was in place before the CMS project. Therefore, not all campuses incur the same kinds of costs. The San Diego campus does not anticipate any upgrade costs during the CMS project because it is waiting until late in the project so it can implement CMS when the latest version of the software is available. Thus, it expects to avoid the cost of having to upgrade from earlier versions. The Fresno campus used an earlier version of PeopleSoft as its legacy system, so it believes it has no need to integrate any existing campus systems because that was done before CMS.

Systemwide, the university expects to spend almost $18 million to integrate existing systems such as telephone registration, directory services, and other existing campus systems that feed information into or retrieve information from CMS. However, CMS functionality will replace some existing systems, such as Web registration, making their integration unnecessary. The nearly $18 million in expected costs for integrations includes almost $13 million in direct costs and nearly $5 million in in-kind costs. The integration in-kind costs are mainly a result of using university personnel not assigned to a CMS position to work on the integrations.

THE UNIVERSITY EXPECTS TO SPEND MORE THAN $296 MILLION IN PERSONNEL COSTS AND $167 MILLION IN CONSULTANT COSTS FOR THE CMS PROJECT THROUGH FISCAL YEAR 2006–07

The legislative request for this audit asked us to report on personnel costs for the CMS project as well as to identify the number of and costs for consultants working on each campus and at the chancellor's office. More than two-thirds of the university's total projected expenditures on the CMS project, about $463 million through fiscal year 2006–07, will support university personnel and consultant costs for the project. Figure 2, shown previously, shows that of the $662 million in overall projected costs for the CMS project, 45 percent is for university personnel and 25 percent for consultants. Table C.1 in Appendix C shows the actual and projected costs by type of cost and by fiscal year, and Table C.2 in Appendix C displays the total costs by type of cost for the project's central costs and by each campus.

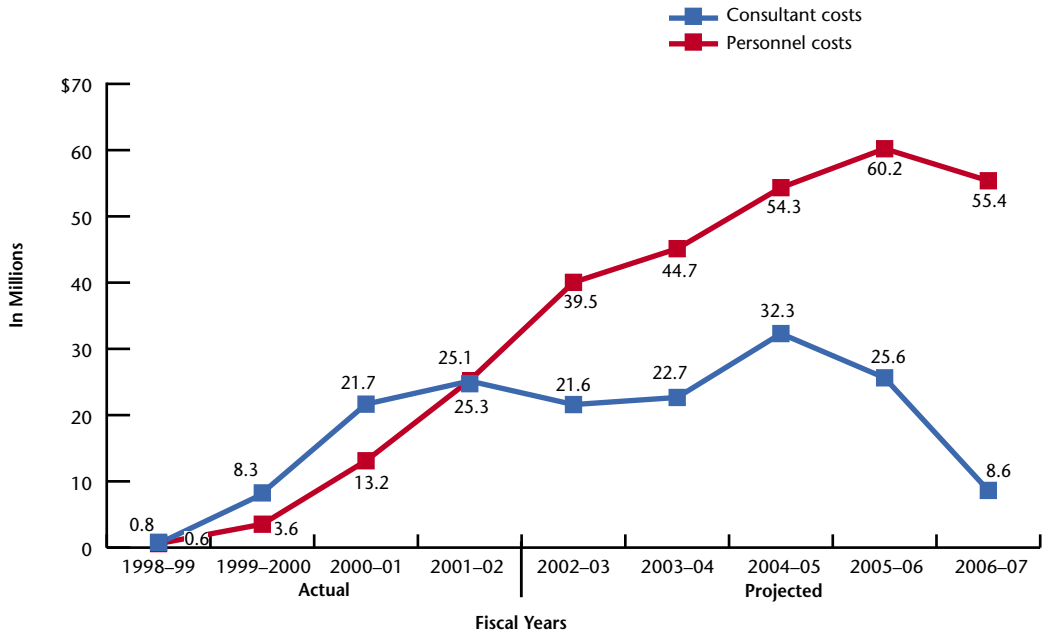
The university, which expects to spend almost $167 million on consultants for the project, believes using consultants is the only way it could rapidly find enough skilled and experienced people to ensure successful early implementation.

The university's CIO says consultants play a valuable role in successfully implementing enterprise resource planning systems such as CMS. In fact, the CIO believes using consultants is the only way the university could rapidly find enough people with the skills and experience to ensure the successful early implementation of the CMS project. The CIO states that, without consultants, the university would have had to take an excessive amount of time to train or hire employees. Furthermore, the CIO believes the knowledge transfer that happens by teaming experienced consultants with university employees is invaluable to support rapid development of staff and institutional knowledge and skills. The CIO stated the university intends to use consultants extensively during the

implementation period and transition to university personnel after staff have developed the necessary skills on CMS, an intention supported by the annual CMS cost projections. As Figure 4 shows, the project begins with higher consultant costs that eventually dwindle as the personnel costs increase. The university has spent only $43 million, or 14 percent, through fiscal year 2001–02, yet projects to spend more than $296 million on personnel costs through fiscal year 2006–07. In contrast, the university already has spent nearly $56 million, or 34 percent, through fiscal year 2001–02, but expects to spend almost $167 million on consultants.

FIGURE 4

A Comparison of Personnel and Consultant Costs Over the Life of the Project



Source: The university's June 2002 cost survey.

Consulting represents about 25 percent of the total projected CMS costs. Table 5 shows that, systemwide, the university plans to spend almost $167 million on consultants during the nine-year development and implementation period. At the chancellor's office, which expects to spend more than $31 million on consultants for its central efforts, consultants have worked on various tasks including developing and coding the modifications to the PeopleSoft software deemed necessary to meet the university's needs. Of the nearly $22 million

already spent, Cedar (formerly known as the Hunter Group), Io Consulting, and PeopleSoft have received more than $4 million each as of June 2002. PeopleSoft has been paid the most for consultants as of June 2002—more than $7 million. Table D.1 in Appendix D provides a complete list of the consulting companies working at the chancellor's office and their respective costs, actual and projected, as reported by the university. Also shown, the chancellor's office has not yet determined which consultants will be used for more than $7 million of the $9 million in projected costs for July 2002 through June 2007.

TABLE 5

Consultant Costs for Developing the CMS Software Centrally and Implementing It at Campuses

	Actual July 1998 Through June 2002	Projected July 2002 Through June 2007	Projected Total Costs
Central	$21,815,624	$ 9,448,408	$ 31,264,032
Campuses	34,044,036	101,377,450	135,421,486
Total Consultant Costs	**$55,859,660**	**$110,825,858**	**$166,685,518**

Source: The university's June 2002 cost survey.

On the campuses, $34 million already has been spent on consultants as of June 2002, but an additional $101 million in spending is projected through 2006–07. These consultants have worked primarily as implementation partners on campuses. They also have worked on specific projects such as integrating existing campus systems into CMS, reengineering the university's business processes to fit CMS better, and in a few instances maintaining CMS at smaller campuses such as the California Maritime Academy. Of the $34 million already spent, Io Consulting, Cedar, and KPMG Consulting have received more than $6 million each, with Io Consulting receiving the most, nearly $10 million. Also, campuses expect to pay Cedar an additional $23 million for the period July 2002 through June 2007 to assist with student administration implementations, partly because of this firm's experience as an implementation partner with the three student administration pilot campuses. Campuses have not determined which consultants will be used for nearly $62 million of expected costs. Table D.2 in Appendix D provides a summary list of consultants working at the campuses, and Table D.3 in Appendix D provides a complete list, by campus, of consulting companies working on each campus.

THE UNIVERSITY EXPECTS TO SPEND MORE THAN $78 MILLION THROUGH FISCAL YEAR 2006–07 ON DATA CENTER COSTS

Our audit scope also included determining the amount of expenses incurred and projected for both the IBM Rochester data center and the current Unisys Corporation (Unisys) data center. In support of its CMS project, the university expects to spend more than $78 million through fiscal year 2006–07 on these costs, including $3.7 million expended because of the failed negotiations with IBM and the need to establish a contingency data center, $4 million in telecommunications costs, and more than $70 million through fiscal year 2006–07 to a data center provider, currently Unisys.

The university originally selected IBM for its data center contract; however, neither side was able to negotiate a final contract.

As discussed in Chapter 5, the university released a request for proposal (RFP) in April 2000 for an outsourced data center in support of the CMS initiative. The data center RFP went to two vendors, IBM and Unisys, the only two firms that successfully completed the university's prequalification process. After evaluating both proposals, the university selected IBM for its data center contract based primarily on IBM's significantly lower price. In September 2000, the university entered into an interim agreement with IBM to establish data center operations in Rochester, New York, while negotiations on a final contract took place. In this interim agreement, the university agreed to pay IBM up to $2.9 million through December 2000 for establishing data center operations for CMS.

However, the university and IBM were never able to negotiate a final contract. Correspondence between the university and IBM state that there were "irreconcilable differences in pricing and scope for the project." The university maintained that it spent considerable time defining data center requirements that IBM should have understood, and IBM stated that its work provided for discovery of more precise operational requirements desired by the university for the data center. According to university correspondence, IBM requested that the price on its original bid be increased to accommodate what IBM perceived as required increases to cost and scope, an increase in price the university noted would have resulted in another vendor winning the contract. Finally, the university acknowledged that IBM did agree to honor its original bid price, but only with what the university believed to be a significantly reduced scope that required the university to absorb considerable additional costs. As a result of the disagreement, the university terminated negotiations with IBM in December 2000 but was still liable under the previously executed

interim agreement for IBM's costs to establish data center operations for CMS. University meeting minutes show that IBM was close to providing data center services for CMS in Rochester, New York when the university terminated negotiations.

Before the university terminated its negotiations, it received a bill from IBM for $2.9 million in connection with its costs to establish data center operations for CMS. In September 2002, more than 1½ years after the university formally terminated negotiations with IBM, the parties entered into a settlement agreement that required the university to pay IBM $320,000. Both parties agreed to discharge any future claim under the prior interim agreement. This agreement effectively concluded the data center dispute with IBM. In addition to the settlement payment, the university reported to us that it incurred costs totaling $351,000 for salaries, consultant costs, and equipment during the failed contract negotiation period. In total, the university reports that it incurred about $671,000 directly associated with IBM's data center operations in Rochester, New York.

As a result of its unsuccessful negotiations with IBM, the university established and operated a contingency data center costing $3 million.

Meanwhile, the university had established a contingency plan for data center services if its negotiations with IBM were unsuccessful. After terminating negotiations with IBM in December 2000, the university executed this plan and amplified the capabilities of an existing data center to provide a hardware environment robust enough to handle the scheduled development and testing of CMS. The university believed it was important to establish this contingency data center to allow the first campuses to develop and implement CMS on schedule. The university used this contingency data center from January 2001, after IBM negotiations terminated, until July 2001, when the Unisys data center became operational. During this period, the university reports spending about $3 million to establish and operate the contingency data center, with most funds supporting the center's hardware, software, and staffing needs.

Finally, in March 2001, the university entered into a contract with Unisys for the data center services specified under its RFP. The cost of the outsourced data center is projected to be more than $70 million through fiscal year 2006–07, $60 million of which is under the current five-year contract with Unisys. The Unisys data center, located in Salt Lake City, Utah, became operational in July 2001. When considering related telecommunication costs of $4 million along with the $3.7 million spent because of the failed negotiations with IBM and the need to establish the contingency data center,

the university expects to spend more than $78 million in connection with its CMS data center. Although Table 3, as previously shown, reflects only $75 million in data center costs, the university says that $3 million of the $3.7 million in contingency data center and IBM costs are accounted for separately as hardware, software, and personnel costs.

THE UNIVERSITY HAS NOT MONITORED SYSTEMWIDE COSTS ADEQUATELY

The university lacks adequate procedures to monitor and control the systemwide costs of the CMS project, so the chancellor's office cannot accurately report on those expected costs on an ongoing basis. Full and accurate reporting will continue to be impossible until the university sets up an ongoing reporting process to capture campus costs. Further, even for the central costs that it considers to be its responsibility, the chancellor's office does not use project status reports that periodically track and compare the variances between actual and projected costs and the initial and revised project budgets. The lack of campus cost reports and sufficient project reports hinder management and other interested parties from accurately judging the university's progress in meeting budget expectations.

The University Lacks a Process to Gather and Monitor Campus Costs

The chancellor's office has not tracked campus CMS costs because it believes these costs are a campus responsibility.

The university cannot accurately report on the project's expected systemwide costs because it has not established an ongoing process to capture and monitor the costs campuses actually are incurring or projecting to incur. Although it tracks central project costs, the chancellor's office does not track campus costs because it believes they are a campus responsibility. When we initially asked about the CMS project costs, the chancellor's office provided an April 2002 CMS expenditure worksheet that estimated $407 million for the CMS project over an eight-year period, of which $216 million represented campus costs. However, the chancellor's office had based this campus cost amount on its June 1999 estimate—an estimate prepared nearly three years earlier. This 1999 estimate of $230 million was very rough, merely estimating costs of $10 million for 22 campuses plus the chancellor's office "campus" costs. The April 2002 cost estimate of $216 million differed only in excluding $14 million deferred because a few campuses' implementation delays extended beyond the eight-year period on the worksheet.

The university explained it never collected the campus cost information centrally because it believes that each campus is responsible for its own implementation costs. As a result, the university was not aware of its total systemwide costs for the CMS project. In response to our concerns during the audit about the incomplete cost information, the university expedited its collection efforts and asked campuses to report their actual and projected CMS costs. This resulted in the June 2002 cost survey, which is the primary source for the campus cost information we present.

The CIO told us the university already was planning to collect cost information from campuses in fall 2002, when campuses would collectively be better able to develop a more accurate assessment of their current and future CMS costs and would be better able to project and report actual and future costs based on the body of experience gained from the system. Although we recognize that estimates probably will improve as the project progresses, we believe that a regular reporting process should have been established in the beginning of the project before campuses incurred significant costs. Campuses reported in the June 2002 cost survey that they already have spent more than $85 million on the project as of June 2002. Although most of the costs have occurred in the last two fiscal years, campuses reported costs as early as fiscal year 1998–99. The university has said it intends to continue the CMS campus cost survey process in future years and to include a high-level summary of those results in annual reports to the Legislature.

The university has not been reporting a clear picture of the project's costs to the Legislature.

However, the university has not been reporting a clear picture of the project's financial status in its annual Measures of Success report to the Legislature. This report communicates the university's status in implementing initiatives in its Integrated Technology Strategy plan, including CMS, and one measure that the university reports on is the tracking of costs of CMS project components against the published budget. In its November 2002 report, the university reported the project budget for fiscal years 2000–01 and 2001–02 as being $30 million and $31 million, respectively, and the actual costs as "at budget." However, the university did not report campus costs, which totaled $29 million and $47 million in those respective fiscal years.

The University Lacks Sufficient Project Status Reports to Measure Performance

Finally, the chancellor's office does not use project status reports that periodically track variances between the actual and projected CMS costs on the one hand and the initial and revised CMS project budgets on the other. Prudent project management calls for establishing approved initial budgets and tracking actual costs, enabling managers to report and monitor project progress through periodic status reports that analyze variances between the planned budget and the actual costs. These variances measure project performance and assist management in controlling the project schedule and costs by predicting shortcomings and reducing the risk of going over budget.

The chancellor's office does not use status reports that track cost variances nor track CMS costs by development, implementation, and ongoing maintenance.

The chancellor's office does not use status reports that track variances, even for the central costs that it considers its responsibility. According to the chief of staff for information technology services, there is no approved initial CMS project budget because the budget is approved annually. Each year's budget for the central CMS effort is developed and funded based on project needs and available funding. The chief of staff for information technology services further states that as project needs have become clearer, funding has been established and shared among the participants. The project funding is adjusted when new costs are identified. The participants' share of that funding, and the results of the various changes, are recorded in the CMS budget forecast documents. The university's CIO asserts that the chancellor's office uses these CMS budget forecast documents to continually track actual project costs against revised budgets. However, these CMS budget forecast documents do not provide an approved initial project budget that the chancellor's office can use to compare against actual and projected CMS project costs, creating the variance analysis discussed earlier. Instead, the CMS budget forecast documents simply report the funding the chancellor's office has allocated or expects to allocate to the CMS central effort throughout the fiscal years and the annual or projected CMS central costs.

Also, because the chancellor's office does not track CMS central project costs by development, implementation, and ongoing maintenance, it has been unable to tell us accurately the amount spent for developing modifications to the software or for ongoing central CMS maintenance. Earlier, in a footnote to Table 4 on page 49, we discussed the university's allocation of CMS

central costs to maintenance based on when campuses begin using CMS, and in Chapter 3 we discuss how the university could not tell us how much it spent to develop the CMS modifications.

ALTHOUGH THE UNIVERSITY DOES NOT HAVE A COMPREHENSIVE FUNDING PLAN FOR THE CMS PROJECT, MOST EXPENDITURES ARE SUPPORTED BY THE UNIVERSITY GENERAL FUND

The CMS Project Charter of 1999 lists a comprehensive, systemwide cost and funding plan as a critical factor for the project's success. However, our audit revealed that the university's funding plan addressed only expected CMS expenditures at the chancellor's office, not any campuses' funding needs. When it does not finalize funding for all CMS costs up front, the university lacks a clear understanding of how the project affects its ability to meet other priorities such as academic needs. Chancellor's office documents indicate that most central CMS expenditures will be supported by the university general fund (general fund), which receives most of its money from the State's General Fund. Our survey of campus funding for CMS similarly shows that campuses have relied and will rely heavily on their general fund revenues to support CMS expenditures. However, a few campuses identified alternative funding sources, including the financing of CMS costs, as potential funding solutions.

The University Does Not Have a Systemwide Funding Plan for the CMS Project

Although the CMS project charter states that a comprehensive, systemwide funding plan is a critical factor to the success of CMS, the university failed to develop a funding plan that addresses all CMS costs.

Although in 1999 it judged the development of a comprehensive, systemwide cost and funding plan a critical success factor during implementation, the university has failed to develop a funding plan that addresses all the CMS project's expected costs. The university's funding plan addresses the funding needs of only the chancellor's office during implementation, but it excludes the similar implementation costs of each campus.

In September 1999, the university developed a CMS Project Charter (charter) that described, among other things, critical factors for the project's success. One factor listed by the university was the development of a comprehensive, systemwide cost and funding plan that included CMS and the funding needs of other, nontechnology high priorities. According to the charter, this funding plan was to guide the

university's decision making on CMS. The charter further stated that resources that were committed to the CMS project should not be diverted to other competing demands—noting, however, that care should be taken to safeguard the university's academic mission.

Although the university's executive vice chancellor and chief financial officer (executive vice chancellor) asserts that the university does have a systemwide funding plan as envisioned by the CMS charter, we disagree that the plan is systemwide. In his November 2002 letter to the bureau, the executive vice chancellor asserts "a systemwide funding plan was developed and has been continually refined as demonstrated in the CMS forecast documents." However, the funding information in the forecast documents focuses solely on the chancellor's office's expenditures during CMS implementation. The executive vice chancellor states "campus implementations were understood to be campus-specific efforts from the beginning." He clarified this point by saying that "campus-specific expenditures are not generally collected by the chancellor's office but are left to the campuses to fund and track." In general, the executive vice chancellor indicated that the chancellor's office's overall management philosophy has been to provide campuses with significant managerial autonomy, thus explaining why campus funding needs on the CMS project were not addressed in the project's funding plan.

Although campuses account for 63 percent of project costs, the "systemwide" CMS funding plan does not consider campus funding needs for CMS.

In fact, it appears that the chancellor's office has taken a hands-off approach to managing campus implementation of the systemwide CMS project. The chancellor's office expects campuses to determine on their own the costs and funding necessary to implement CMS. Campus CMS implementation accounts for 63 percent of the project's overall anticipated cost. In his November 2002 letter to the bureau, the executive vice chancellor states that "campus presidents are held accountable for the successful operations of the campuses" and that "the outcome expectation is to implement all components of the system successfully." He clarifies this point by explaining that each campus is responsible for determining the specific level of funding needed to cover campus CMS implementation costs. This point of view explains why the chancellor's office never deemed it necessary to collect campus-level funding information to ensure that adequate funds had been secured to cover expected campus costs.

Considering that the chancellor's office directed all campuses to implement CMS, thus making the scope of CMS systemwide, funding for the entire project should have been finalized at the chancellor's office. It appears that the university recently began to see the importance of having campus cost and funding information when it began collecting this data in response to our audit. The university's executive vice chancellor writes in his November 2002 letter that "given the evolution to the current systemwide implementation of CMS, the [university] is beginning to collect campus expenditure and funding data" and "the current audit has helped expedite the beginnings of that process." However, the evolution of the CMS project to a systemwide implementation is not a recent phenomenon—the university's chancellor directed staff to move forward with systemwide implementation in July 1999.

In light of the State's current budget deficit, the university likely will find it more difficult to fund future CMS expenditures without identifying funding priorities or sources.

Finally, in collecting systemwide CMS cost and funding information, the university also should consider the required funding for other high priorities, as envisioned in the CMS project charter. Under the charter, the systemwide funding plan was to address the funding needs of other significant university priorities, a prudent step that would allow the university to prioritize projects that may compete for resources. However, the university's current funding plan does not specifically address the funding requirements for these other priorities. Although in recent years the university has benefited from increased support from the State's General Fund under a partnership agreement, the State's current budget deficit makes continually increasing state support unlikely. In fact, the governor's proposed budget for fiscal year 2003–04 reduces the university's base budget by $326 million, as well as an additional $201 million in anticipated funding increases related to its partnership agreement with the State. The governor's proposed budget assumes that future anticipated student fee increases and increased general fund support for enrollment growth will help offset these reductions, but these offsets cover only $409 million of the $527 million removed from the university's budget. Further, $86 million of the $409 million is to be set aside for financial aid and thus is not available for other purposes, such as CMS. As a result, the university likely will find it more difficult to fund future CMS expenditures when it has not established funding priorities or funding sources for all expected CMS costs.

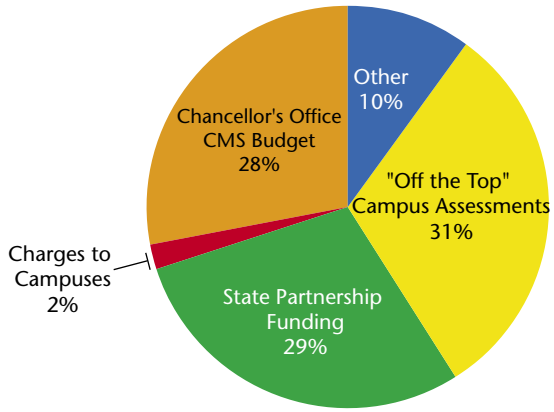
The Chancellor's Office Is Funding Its Share of CMS Costs Through Its General Fund

Responding to the June 2002 cost survey, the chancellor's office provided actual and projected cost information for its central costs for the CMS project as a total cost of $236 million through fiscal year 2006–07. To understand the funding sources supporting these actual and projected expenditures, we issued a subsequent survey in November 2002. Responding to this survey, the chancellor's office said it will fund the entire $236 million from its general fund—general support fund (university sub-account 001).

As Figure 5 shows, budget forecast documents from the chancellor's office indicate that approximately 31 percent of its total central CMS costs will be supported through an "off the top" assessment of all campuses—funding that otherwise would have been passed from the chancellor's office to the 23 university campuses during the annual budget allocation. These annual "off the top" assessments have consistently been $10 million to all campuses collectively (except for the $5 million assessment in fiscal year 1999–2000). The chancellor's office expects to fund 29 percent of its CMS costs through its partnership funding from the State, 28 percent through its existing CMS budget, 2 percent through specific charges to campuses, and 10 percent from "other sources." These other sources represent chancellor's office allocations of additional funding based on unallocated systemwide funds at the end of the fiscal year.

FIGURE 5

Projected Chancellor's Office Central CMS Funding Sources Fiscal Years 1998–99 Through 2006–07



Source: The university's CMS budget forecast document (December 2002).

Campus CMS Expenditures Have Been Supported Primarily by the University General Fund, Although Some Campuses Have Found Other Funding Sources

The chancellor's office requires campuses to demonstrate, at a minimum, executive commitment to funding before beginning implementation and, ideally, to develop a comprehensive multiyear funding plan. Given the university's lack of campus funding information for CMS, the bureau surveyed all 23 campuses to ascertain how they funded their CMS expenditures through fiscal year 2001–02, and how each intends to fund its projected CMS expenditures through fiscal year 2006–07. The survey's results indicate that all campuses rely on their general fund—general support fund for their CMS expenditures and expect to rely on that source in the future. General fund allocations come from the chancellor's office and represent the largest source of support for each campus.

In connection with our audit, all 23 campuses completed a June 2002 cost survey that detailed actual and projected expenditures on CMS. To understand the funding sources supporting these reported expenditures, the bureau issued a subsequent survey in October 2002 that required each campus to indicate the funding sources for these CMS costs. Tables 6 and 7 on the following pages show the campus-by-campus results of the bureau's funding survey. Table 6 gives the actual funding through June 30, 2002.

Sixteen of the 22 campuses that incurred CMS costs through June 2002 reported that they used only general fund assets to support CMS costs.

As Table 6 on the following page shows, campuses have relied heavily on their general fund accounts to fund CMS costs through June 30, 2002. In fact, 16 of the 22 campuses that incurred CMS-related costs during this period reported that they used only general fund assets to support CMS costs. Overall, approximately 85 percent of campus CMS expenditures through June 30, 2002, have been supported through campus allocations from their general fund—general support funding. The predominant use of campus general fund assets to support campus CMS efforts is not surprising because the general funds are the campuses' largest source of money. Also, because such expenditures are not restricted to any specific program, campuses can spend general fund revenue for a variety of purposes, including such items as salaries, instructional materials, and administration costs.

TABLE 6

University Campus Funding Sources for CMS Expenditures (July 1998 Through June 2002)

Campus	General Fund–General Support	General Fund–Information Resources and Technology	General Fund–Capital Outlay	Auxiliary Funds	Various University Trust Funds	Other Revenue Funds	Total Funding Reported	Total Expenditures Reported
Bakersfield	$ 386,455						$ 386,455	$ 386,455
Channel Islands	256,580						256,580	256,580
Chico	3,443,824					$ 1,067	3,444,891	3,444,891
Dominguez Hills	85,600						85,600	85,600
Fresno*	6,938,580		$469,635		$ 652,011		8,060,226	8,060,226
Fullerton	933,440						933,440	933,440
Hayward	5,059,187						5,059,187	5,059,187
Humboldt	813,242						813,242	813,242
Long Beach	13,204,585						13,204,585	13,204,585
Los Angeles	1,673,200						1,673,200	1,673,200
Maritime Academy	2,007,733						2,007,733	2,007,733
Monterey Bay*	409,576			$1,412,276			1,821,852	1,821,852
Northridge	5,242,297				5,239,266		10,481,563	10,481,563
Pomona	3,781,988						3,781,988	3,781,988
Sacramento	2,270,200						2,270,200	2,270,200
San Bernardino	5,032,514	$406,530					5,439,044	5,439,044
San Diego†								
San Francisco*	12,300	237,100					249,400	249,400
San Jose	2,485,235				2,335,586	95,068	4,915,889	4,915,889
San Luis Obispo	8,874,561						8,874,561	8,874,561
San Marcos*	1,140,200						1,140,200	1,140,200
Sonoma	6,496,734			815,093	523,459	483,054	8,318,340	8,318,340
Stanislaus	187,547						187,547	187,547
Totals‡	**$70,735,578**	**$643,630**	**$469,635**	**$2,227,369**	**$8,750,322**	**$579,189**	**$83,405,723**	**$83,405,723**
Percent	84.81%	0.77%	0.56%	2.67%	10.49%	0.70%		

Source: The Bureau of State Audits' October 2002 "CMS Funding Survey"; the university's June 2002 cost survey.

* Fresno, Monterey Bay, San Francisco, and San Marcos fund CMS costs through a pooled account that is supported by the applicable funds listed above for each campus. These figures may not represent actual funding sources for CMS at these campuses because the figures are based on the contribution percentages of these funding sources to the pooled account.

† No funding information is provided for the San Diego campus because it will not incur CMS implementation costs until after June 2002.

‡ The table does not include chancellor's office "campus" costs. These costs represent the cost of implementing the human resources and finance applications at the chancellor's office. For the period above, chancellor's office "campus" costs totaled $1,647,635. This amount was funded through "general fund–general support."

Although Table 6 shows the campuses predominantly use general fund revenue to support CMS costs, our survey revealed that some campuses have used other funding sources in conjunction with the general fund. Six campuses reported that they used auxiliary funds, university trust funds, other revenue funds including parking and dormitory revenue, or a combination of all three to support their CMS costs. As Table 6 demonstrates, four campuses collectively reported that they spent about $8.8 million of university trust fund assets to support their CMS costs, equaling more than 10 percent of all campus expenditures through June 30, 2002. The Northridge and San Jose campuses used trust funds most extensively, drawing $5.2 million and $2.3 million, respectively.

The university trust funds are established under Education Code, Section 89722, and contain money obtained from various sources including but not limited to gifts, donations, and collected fees for parking, health facilities and services, and extension programs. According to Northridge, most of the trust fund assets it spent for CMS came through collected fees for accounting services, while the remainder came from its extended learning fund. San Jose indicated that the trust fund money it spent on CMS was obtained primarily through the contributions of auxiliary organizations, while extended learning revenue, health services fees, and parking revenue were the other trust fund assets used to support CMS costs.

Two campuses have assessed their auxiliary organizations for CMS costs.

The bureau's funding survey also revealed that two campuses—Monterey Bay and Sonoma—have assessed their auxiliary organizations a combined $2.2 million through June 30, 2002, to partly absorb campus CMS costs. Campus auxiliary organizations provide student housing, parking, athletics, food services, bookstores, and other self-supporting noninstructional services. The services provided by auxiliary organizations are funded through specific user charges and are not subsidized by the State. Both campuses have indicated they chose to assess these auxiliary organizations for CMS costs because the auxiliaries plan to use CMS in their own operations. The survey also revealed that the Chico, San Jose, and Sonoma campuses have used funding sources other than those mentioned above. Specifically, these campuses have collectively obtained $579,189 in support of their CMS costs by using funding sources such as dormitory, parking, lottery, and continuing education revenue.

TABLE 7

Projected University Campus Funding Sources for CMS Expenditures (July 2002 Through June 2007)

Campus	General Fund–General Support	General Fund–Information Resources and Technology	Auxiliary Funds	Various University Trust Funds	Other Revenue Funds	Total Funding Reported	Total Expenditures Reported
Bakersfield	$ 8,077,346					$ 8,077,346	$ 8,077,346
Channel Islands	605,087					605,087	605,087
Chico	14,444,501				$ 556,748	15,001,249	15,001,249
Dominguez Hills	13,744,200					13,744,200	13,744,200
Fresno	10,165,750			$ 156,150		10,321,900	10,321,900
Fullerton*							18,390,193
Hayward†	13,436,439					13,436,439	13,436,439
Humboldt	10,829,622					10,829,622	10,829,622
Long Beach	23,903,543					23,903,543	23,903,543
Los Angeles	11,747,300					11,747,300	11,747,300
Maritime Academy	2,630,452					2,630,452	2,630,452
Monterey Bay‡							13,561,785
Northridge	7,689,766			47,500		7,737,266	7,737,266
Pomona	16,455,451					16,455,451	16,455,451
Sacramento	17,002,300					17,002,300	17,002,300
San Bernardino	12,645,127	$ 1,824,813				14,469,940	14,469,940
San Diego	37,596,358					37,596,358	37,596,358
San Francisco†	7,203,200	11,839,000				19,042,200	33,032,600
San Jose	9,410,103			804,440	333,770	10,548,313	10,548,313
San Luis Obispo	24,777,513					24,777,513	24,777,513
San Marcos	9,682,100					9,682,100	9,682,100
Sonoma	7,332,595		$1,120,395	2,824,284	1,189,800	12,467,074	12,467,074
Stanislaus	9,329,000					9,329,000	9,329,000
Totals§	**$268,707,753**	**$13,663,813**	**$1,120,395**	**$3,832,374**	**$2,080,318**	**$289,404,653**	**$335,347,031**
Percent	92.85%	4.72%	0.39%	1.32%	0.72%		

Source: The Bureau of State Audits' October 2002 "CMS Funding Survey"; the university's June 2002 cost survey.

* The Fullerton campus indicated it had yet to determine how its projected CMS costs would be funded; however, the campus estimates that at least 75 percent will come from the general fund, while other revenue sources such as parking, housing, and the university trust fund also may be used.

† The Hayward campus indicated that it may have to finance one-time CMS costs as necessary. The San Francisco campus indicated that it will finance the difference between its projected CMS expenditures and the funding reported above.

‡ The Monterey Bay campus declined to project how its future CMS expenditures would be funded; however, the campus estimates that the majority of costs will continue to be funded through the general fund. The campus also plans to obtain funding from auxiliary organizations.

§ The table does not include chancellor's office "campus" costs. These costs represent the cost of implementing the human resources and finance applications at the chancellor's office. For the period above, chancellor's office "campus" costs totaled $5,065,600. This amount was funded through "general fund–general support."

Table 7 summarizes how the university's 23 campuses expect to fund their remaining projected CMS expenditures between fiscal years 2002–03 and 2006–07. The survey's results show that campuses intend to rely even more heavily on general fund assets to support CMS future costs. Specifically, campuses expect to fund approximately 93 percent of their projected CMS costs through their general fund—general support allocations.

Only seven of 23 campuses were able to provide a funding plan that identified funding sources for projected costs.

Based on a comparison between Tables 6 and 7, it appears that some campuses expect to use university trust fund assets to a lesser extent in the future, electing to increase general fund support for CMS instead. However, the bureau's funding survey revealed that campuses may be unsure how they will fund future CMS costs. Of the 23 campuses, only seven were able to provide the bureau with a funding plan for CMS costs that identified funding sources for projected costs. Additionally, it appears that some campuses now believe that available campus revenue will not be sufficient to cover all CMS costs, and are considering the financing of these expected expenditures. Both the San Francisco and Hayward campuses' funding survey responses indicated a potential need to finance a portion of their projected CMS expenditures, stating that existing campus resources are insufficient to fund CMS implementation costs. As a result, as shown on Table 7, the San Francisco campus reported less projected funding than expenditures.

RECOMMENDATIONS

To ensure that it adequately monitors and controls project costs, the university should take the following actions:

- Establish a mechanism to collect and compile systemwide project cost information, including campus costs. The university should determine what level of quarterly cost information it needs from campuses to monitor the project. Further, the university should collect comprehensive cost information annually, including in-kind, upgrades, and integration costs.

- Compare the collected project costs against the approved systemwide project budget and publish this information in a quarterly status report.

Additionally, the university should ensure that it includes all costs of the CMS project in its annual reports to the Legislature.

Finally, the university should establish a systemwide funding plan for the CMS project that includes campuses. Further, before it begins any major information technology project in the future, it should ensure that it has a funding plan in place that covers the entire scope of the project. ■

CHAPTER 3

The Common Management System May Not Achieve All Its Business Objectives Nor All the Possible Benefits of a Systemwide Software Project

CHAPTER SUMMARY

Although the Common Management System (CMS) may achieve some of the benefits the California State University (university) has outlined, we noted problems that cast doubt on whether CMS will achieve all the university's business objectives related to the project's mission, as stated in the CMS Project Charter (charter). These business objectives include minimizing costs and time to implement and maintain the software, and providing ready access to current, accurate, and complete administrative information. Several problems we noted stem from the university's weak efforts early in the planning process and its limited expectations with regard to systemwide reporting. For instance, the university's stated intent was to minimize cost by limiting the modifications to the vendor software to those needed to meet its business needs. However, the university had no basis to anticipate the extent of modifications it has needed because, before it purchased the software, it did not sufficiently evaluate its specific business processes to understand which business processes the potential vendors' software products could accommodate and which software products would require modification to meet its business needs. Additionally, it often must continue to reapply modifications when the vendor software is updated, increasing maintenance costs.

Further, the university plans to continue to use existing processes for systemwide reports because it did not design CMS to replace these processes. Thus, when CMS is implemented systemwide in fiscal year 2006–07, the way campuses report data to the chancellor will not be substantially different than it is now, except CMS will be the source of the data. Campus data still will be transmitted quarterly or on certain census dates or at semester's end, when the chancellor's office will use other systems to manipulate and summarize the data into a format for systemwide reports.

Although the university did use recommended practices for designing, developing, and testing CMS software modifications, it might have averted certain product quality and information security problems if it had employed other recommended practices relating to quality assurance. Finally, the university's piecemeal approach of identifying, procuring, and implementing its own CMS solution did not ensure that it shared project risk with vendors. It assumed substantially all the responsibility for the project's success and the considerable financial and business risk involved in ensuring that the software meets its business needs and is implemented successfully.

THE CMS PROJECT MAY NOT FULLY ACHIEVE THE UNIVERSITY'S STATED BUSINESS OBJECTIVES

According to the chancellor, the university's decision to implement a systemwide CMS was based on reasons expressed in the CMS project charter.

The university expects to accomplish certain business objectives with its CMS project, but problems noted during our review indicate that CMS may neither fully achieve those objectives nor offer what could have been achieved from such a system-wide project. In October 2002, the university chancellor told us the university's decision to implement a systemwide CMS was based on reasons expressed in the mission statement, strategic outcomes, and business objectives in the charter. The charter defines the mission of the university's administrative functions as providing efficient, effective, high-quality service to students, faculty, and staff. The charter also lists several strategic outcomes, including high-quality customer service and improved efficiencies; and identifies the general business objectives the university expects to accomplish through its CMS project. The university expects that upon completion or within a certain period after implementation of the CMS system, it will have accomplished, among others, these objectives:

- Minimize costs to implement and maintain application software.
- Minimize time to implement application software.
- Establish standards to share information for common reporting purposes.
- Provide ready access to current, accurate, and complete administrative information and the means to use it in an effective manner.

However, our review of the CMS project found problems that cast doubt on whether the university will fully achieve its stated business objectives or reap benefits possible from a systemwide implementation of a project such as CMS. Though focusing on the university's business objectives, the following analysis has broader implications because these objectives also relate to the mission statement and strategic outcomes contained in the charter.

Initial Versions of the Vendor's Software Required About 200 Modifications to Meet the University's Business Needs

The university's stated business objectives for the CMS project include minimizing costs and time to implement the software.

The university's stated business objectives for the CMS project include minimizing costs and time to implement the software. An important element affecting this objective is the cost and time involved with modifying the software to meet the university's business needs. The university has made more than 100 modifications to the initial version of the CMS human resources software, more than 50 to the finance software, and 40 to the student administration software. It made these modifications to change functionality or to generate reports or forms. Often, modifications then must be reapplied each time PeopleSoft releases a new version of the CMS software, adding potentially significant maintenance costs to reapply, test, and implement the modifications. Although we recognize that not all modifications take the same amount of time and effort, we are unable to quantify which modifications were most costly because the university did not track modification costs.

The CMS charter explicitly states that the design "bias" for the project was to be in favor of minimizing software modifications. Therefore, to minimize the cost and time to develop, implement, and maintain the CMS software, the university planned to use the unmodified, or "vanilla," version of the PeopleSoft software unless compelling justification could be made for modifying it. In an effort to contain costs, the university has established an approval process for modification requests, and not all campus requests for modifications are approved. The university considers the need for a modification based on whether it affects a campus's ability to meet business needs including legal, regulatory, or university requirements. Also, the university considers modifications that would result in a significant reduction in manual effort or improvement in administrative productivity. As it develops the software applications, the chancellor's office defines, with input from selected campus representatives, the system requirements to meet those business

needs. The chancellor's office approves modifications to the vendor's software to produce the CMS version distributed to campuses for implementation.

Although it initially planned to make as few modifications as possible to the PeopleSoft software, the university ultimately found that it needed to make about 200 modifications to the initial versions of the software applications to meet business requirements and other campus needs. Between April 1999 and September 2000, the university developed more than 100 modifications to the human resources version 7.6 software application. One modification was developed to transmit timesheet information entered into CMS each payroll period about hourly employees and salaried employees' leave to the State Controller's Office payroll system to avert dual entry by university employees. Similarly, a modification was developed to create an interface between the university and the State Controller's Office so payroll information from the State Controller's Office could be downloaded into CMS each pay period. This payroll information is required in CMS to generate financial entries, link payroll transactions with funding sources, and charge labor costs in the CMS finance software application.

One modification was developed to transmit timesheet information entered into CMS each payroll period to the State Controller's Office payroll system.

The university expects to make some additional modifications to the CMS human resources software application. Although it developed a modification to eliminate double entry of certain timesheet information to the State Controller's Office payroll system, campuses using the CMS human resources application must enter other employee information needed to ensure that employees are paid correctly, such as position changes or terminations, into both CMS and the State Controller's Office personnel employment system. This double entry requires additional time to rekey the data and introduces the risk of data entry errors. The university decided to revisit this double entry issue in November 2002, and the senior director for the CMS project expects to modify the human resources application to resolve this issue and to make other changes and enhancements.

The university also developed more than 50 modifications to the vendor's 7.5 version of the finance application between August 1999 and September 2000, and about 40 modifications to the 8.0 version of the student administration application from late January 2001 through September 2002.

Compounding the time and costs for modifications, PeopleSoft periodically releases new versions of the CMS software, and the university intends to keep current with those releases. Thus, the university will need to reapply many of the CMS modifications to the new releases, adding potentially significant maintenance costs in reapplying, testing, and implementing these modifications. For example, about 17 months after it developed the 7.6 version of the CMS human resources application, the university made 75 modifications to and released the newest human resources version 8.0 application. According to the director of software operations and support services, all these modifications were reapplications of the previous modifications that still were necessary for the newest version to meet the university's business needs. Reapplications of modifications also are likely to be needed when the university implements the next version, version 8.4, of the finance application, which the university began developing in June 2002 and plans to release in July 2003.

Because the university did not track the hours spent working on modifications, it does not know the costs associated with these efforts.

In September 2002, we discovered that the university did not track the number of hours that employees and consultants worked to complete modifications, even though it estimates the number of hours needed to develop modifications and considers these estimates when evaluating whether to approve modifications. It does not know the costs associated with these efforts because it did not track the hours spent working on modifications. After we brought this matter to its attention, the university informed us in November 2002 that it had begun to track and monitor both estimated and actual hours for developing modifications to the student administration application, and that it was planning to do so for all subsequent modifications to all three software applications.

It appears that the costs of developing and implementing modifications could be significant. The chancellor's office reported costs in the cost survey, described in Chapter 2, for CMS general operations, training, and development and implementation of the CMS software as of June 2002 at more than $34 million. According to the senior director for the CMS project, this includes costs associated with supporting the hardware and software for CMS that would have been incurred without modifying the vendor's software. Nevertheless, it appears that a significant amount of the work associated with these costs was modifying the software to fit the university's business needs and working with campuses that are implementing the modifications.

The senior director for the CMS project acknowledges that the chancellor's office did not attempt to estimate the time or cost involved with making modifications before starting development of each software application. Nevertheless, she asserts that the time and cost in developing these modifications were not higher than anticipated for the student administration and finance applications. The senior director acknowledges that the human resources version 7.6 application required more modifications than might have been anticipated, but she points out that it was the university's first development effort. However, although the university may have started to recognize the time and cost involved with making modifications once it started developing each software application, it had no basis to anticipate the extent of modification effort needed at the time it decided to purchase the software and implement CMS. Further, we question how the university could have measured its anticipation of the modifications' costs when it did not track the actual costs associated with the modifications.

The University Has Not Implemented CMS in a Manner That Will Maximize Systemwide Reporting

Installing shared software university-wide could have created an opportunity to provide the chancellor's office and each campus direct access to information to produce current and complete reports; however, the university did not implement the software in this manner.

The university intended CMS to meet the business objectives of providing ready access to current, accurate, and complete administrative information, as well as establishing standards for common reporting processes. The July 1999 decision to install the same suite of software university-wide created an opportunity for the university to achieve these objectives not only within each campus, but also systemwide—using the PeopleSoft software without maintaining its current software for systemwide reporting. Ideally, the university could have chosen to use the same best business processes at each campus, supported by one shared copy of the software or several copies that focused on campus size and needs, where a data file was stored each night for use the next day at a university-wide data storage and retrieval facility (data warehouse). Then, individuals at the chancellor's office or at each campus could have directly accessed this information to produce current and complete reports. This approach would have been one way to achieve savings through implementing a university-wide suite of administrative software as discussed in Chapter 1 and to enable all students, faculty, and staff to "interact with information resources from anyplace, to anyplace, at anytime" as described in the university's information technology strategy.

However, the university did not implement its suite of software in such a manner. Instead of making its standard, "Are we maximizing the university-wide utility of the common administrative system while minimizing implementation and maintenance costs?," it appears the university has been content to limit its standard to, "Are we implementing and maintaining the university-wide system at less cost than would have been incurred if each campus procured, implemented, and maintained its own suite of administrative software?"

The University Is Not Installing Shared Databases

Each campus's database must be individually maintained and tested.

As discussed in Chapter 1, IBM apparently built several potential models that varied from one shared copy of the software to several copies that focused on campus size and needs. In addition, the university CIO informed the board of trustees (board) that the university was identifying the costs and timing involved in moving to shared management information software for campuses. One method of sharing management information software would include sharing databases. However, the university has been installing separate and distinct databases for all campuses except the Sonoma and Maritime Academy campuses. As a result, the university must maintain each of these numerous databases separately, and each campus must perform testing of the changes to its distinct databases.

We asked the CIO about information we received related to various campuses banding together to share databases. However, in January 2003, he informed us that little had been done in this area:

> "We are just beginning to look at how we might improve upon our hardware and operations set up in Salt Lake City based on the past year plus of experience. One item of review is that of the feasibility of campuses sharing databases, but we have not gotten into it very far at all yet. Our first step is a conference call with a few of the campus folks, that is just in the process of being scheduled."

Further, he indicated he could not even speculate on the benefits:

> "Primarily, we are looking for efficiencies and better utilization of resources that may be possible with the sharing of databases and/or database servers in Salt Lake City. There may be other benefits (and liabilities) involved, but until we actually have the discussions; I don't want to speculate."

Nevertheless, it is puzzling as to why the university did not focus on exploring shared databases when it designed the system. IBM raised the concept of shared software in 1996, the concept was communicated to the board, and a university business objective included minimizing costs to implement and maintain application software.

Functionality Will Vary Across Campuses

Only the Los Angeles campus has plans to implement all of the functionality elements available in the CMS applications.

Implementing the CMS software throughout the university is resulting in a wide variation in functionality across campuses because most campuses have not implemented and are not planning to implement all the modules or sub-modules (functionality elements) purchased under the PeopleSoft agreement. The university also has created additional functionality elements for CMS in areas in which PeopleSoft did not provide functionality. In fact, only the Los Angeles campus plans to implement all the functionality elements available in the finance, human relations, and student administration applications. This lack of uniformity raises the cost of implementing and maintaining the CMS software and limits its usefulness in producing systemwide reports.

To assess the consistency of functionality across all campuses, we asked the university for a summary showing the functionality elements implemented at each campus. However, we found the university never defined at the beginning of the project what specific functionality comprised CMS. That is, the university did not identify which functionality elements each campus was to implement in return for what the university estimated to be the cost of the project. Further, the senior director for the CMS project acknowledges that the university has not established a minimum level of functionality that campuses are required to implement systemwide. Nevertheless, the university provided us a functionality matrix of what it subsequently understood campuses were implementing, although we noted instances in which the matrix was incomplete. Therefore, in October 2002 we asked the campuses to report the functionality elements they had implemented or planned to implement during the systemwide implementation effort. The functionality elements the campuses reported represent the level of functionality the campuses considered when reporting costs in the June 2002 campus cost survey. Table 8 gives the number of campuses related to the number of functionality elements they reported.

TABLE 8

Range of Functionality Elements Implemented by Campuses

	Number of Campuses	Number of Functionality Elements Implemented or Planned*
Human Resources Application†		
	1	41
	0	36 to 40
	6	31 to 35
	2	26 to 30
	4	21 to 25
	9	16 to 20
	1	11 to 15
	1	6 to 10
	0	1 to 5
Finance Application†		
	1	12
	3	9 to 11
	11	7 to 8
	5	5 to 6
	4	3 to 4
	0	1 to 2
Student Administration Application‡		
	1	22
	8	18 to 21
	4	14 to 17
	5	10 to 13
	4	6 to 9
	0	1 to 5

Source: The Bureau of State Audits' October 2002 Module Survey, which reflects the status of functionality elements as of June 2002.

* Includes modules, sub-modules, and university-created functionality.

† Number of campuses equals 23 campuses plus chancellor's office (human resources and finance only).

‡ Channel Islands and chancellor's office did not plan to implement student administration as of the October 2002 survey.

Table 8 shows that wide variation exists in the number of campuses implementing or planning to implement functionality elements of the human resources, finance, and student administration applications. For example, four campuses plan to implement six to nine functionality elements of the student administration application, while eight campuses plan to implement 18 to 21 functionality elements. It is also important to note that CMS project managers explained that

these functionality elements do not have equal functionality. Variability can exist within each functionality element as well. For example, although all campuses have implemented or plan to implement the general ledger functionality element, its functionality still could vary by campus. The university is conducting or planning more than 20 unique implementations of the software, and this lack of uniformity increases implementation costs. Also, maintenance costs increase because each campus must perform testing of its implementation of software revisions that reflect modifications and upgrades.

The university is conducting or planning more than 20 unique implementations of the software, which will increase the cost to implement the system.

The university should expect additional costs from campuses that anticipate increasing functionality by adding functionality elements not considered in the previous cost projections. We asked campuses to report any functionality elements they anticipated implementing but had not included in the cost projections reported in the June 2002 cost survey. This information revealed that, similar to the results previously shown in Table 8, a great deal of variation exists in the anticipated functionality. To the extent that campuses actually implement these anticipated functionality elements, CMS project costs, currently estimated at $662 million including maintenance and operations through fiscal year 2006–07, will increase accordingly. Appendix E shows a list of the functionality elements that each campus and the chancellor's office have implemented, plan to implement, or anticipate implementing for the systemwide CMS.

With campuses implementing various functionality elements, various levels of functionality and data will exist at each campus, creating potential data gaps in systemwide reports the university might want to produce. Moreover, even if all campuses implemented the same functionality elements, the information could not be compiled into useful systemwide reports without additional manipulation because campuses currently structure their data in various ways. For example, while reviewing campus accounting records produced by CMS, we found an accounting table that had a column labeled "class field." At one campus, the "class field" was left blank, or unused, while at another campus selecting the proper CMS class code in this "class code" field allowed us to capture the CMS-related expenditures at that campus. The university currently uses a system outside of CMS, known as the Financial Information Record Management System, to interpret this inconsistent campus coding for systemwide financial reporting. As a result, the feasibility of using CMS as it currently exists to produce

Information entered into CMS is not readily available to the chancellor's office for systemwide reporting.

useful systemwide management reports without additional manipulation of the data may not be substantially better than it was previously.

Moreover, the university cannot use CMS, as the university designed it, to produce systemwide reports because CMS is a transaction-based operational system without a systemwide data storage and retrieval (data warehousing) operation. In other words, an employee enters information into the system, but that information is not readily available to the chancellor's office for systemwide reporting. The university reportedly defined data warehousing as out of scope early in the CMS project's life. We discuss the university's recent efforts to address campus level data warehousing in Chapter 5.

Systemwide Reporting Processes Will Remain Substantially Unchanged After CMS Is Implemented

Currently, to prepare systemwide reports, campuses extract the necessary data from each of their electronic information systems, at the level the chancellor's office prescribes. When it receives electronic data from the campuses, the chancellor's office uses other systems, such as the Financial Information Record Management System, to manipulate and summarize the data into a format that allows systemwide reports. However, the chancellor's office can produce only systemwide reports that stay within the parameters of the collected information. For example, when we were analyzing the increase in full-time-equivalent university personnel, the chancellor's office could provide the number of information technology workers at a given campus, but it could not give information on these workers by certain functional departments. Instead, each campus had to provide the detailed data. The chancellor's office collects systemwide data only for the tasks and decision making deemed necessary, so more detailed information than already is collected involves more effort by all campuses.

This reporting process will remain substantially unchanged when CMS is implemented fully, except CMS will be the source of the data as opposed to previously existing information systems. For example, the currently existing corporate data warehousing operation will continue to contain its current level of financial data as defined in the Financial Information Record Management System reporting structure. As before, this data will not be current because campuses report the financial data quarterly. Also as before, student data (for state and federal

reporting on applications, enrollments, unit loads, and degrees granted) will not be current, but will continue to be gathered at the fall census dates or by semester.

Although CMS Provides Some Functionality That Did Not Previously Exist, Some Campuses Have Lost Some Functionality

One campus says it must now manually perform some functions and enter the results into CMS that its prior system had performed automatically.

As discussed in Chapter 1, the chancellor said the university implemented CMS, in part, because "improved administrative systems were necessary . . . to provide the level and type of services it required." However, some campuses now have less functionality for some processes than with the systems CMS replaced, increasing staff workload for these processes. For example, one of the three campuses we visited told us the CMS finance software lacks some functionality that the prior campus system had for automatically calculating and withholding taxes from employees and out-of-state vendors. The campus says it now must perform these functions manually and enter the results into CMS. Also, the campus tells us that its previous student administration application was more functional than CMS. For instance, the former student administration system automatically recognized students who applied to graduate but did not graduate as intended, and allowed them to register for the upcoming term. However, CMS cannot automatically recognize these students, so the enrollment staff must correct the student records in CMS manually to allow students to register. Campus staff say that in spring 2002 more than 20 percent of students who applied to graduate did not graduate as intended. In addition, campus staff say the former student administration system automated such processes as entering some test scores, correcting student data, and creating new terms for continuing and newly admitted students—all of which now require manual processing using CMS. Campus staff believe this manual processing has significantly increased their workloads and the time they need to complete their responsibilities.

To change or add functionality to the CMS software, campuses must request the university to approve a modification. However, not all campus requests for modifications are approved because, in an effort to contain costs, the university approves modifications only if there is a "compelling justification" for the change. The university recognizes that some campuses have taken a step back with some of their functionality. However, the senior director for the CMS project believes these setbacks,

some of which will be improved by future software releases, are outweighed by the overall functionality across the system. For example, the senior director states that most campuses did not have a human resources system before CMS. She also says that several campuses have taken a step forward with their new CMS, citing Sonoma's increased functionality in its student administration system. The university plans to add functionality elements to increase the CMS functionality available to campuses. Nevertheless, some campuses must continue to operate some processes with less functionality than before CMS.

The CMS Project Has Encountered Other Problems in Work Quality and Information Security

Finally, the university has experienced problems with fixing software errors and with information security. Although providing updates and fixing some minor software errors to its newly modified CMS software is expected, the university also needed to make corrections and redistribute some of these CMS software updates and fixes. When the university takes more than once to provide complete updates or fix some errors, campuses must spend more time and money redoing their work or assume the risk of potential system errors. Also troubling is the university's failure to address information security adequately, exposing confidential information of students and employees. Moreover, some campuses continue to operate the CMS software without adequate password management.

Between October 2001 and November 2002, the university had to redistribute the modified software twice because of errors in its initial release.

Between October 2001 and November 2002, the university distributed to campuses three releases each of the CMS software applications, totaling nine application releases. The university had to redistribute two of these within two weeks of their initial distribution primarily because of errors in the initial releases. During this same period, the university distributed 80 updates or fixes to the human resources application of the CMS software, but had to redistribute 14 of these. More recently, the university distributed 175 updates or fixes to the student administration application between June and December 2002, but had to redistribute 20. The university had to redistribute the updates and fixes largely because of errors, but also because it needed to change related unclear documentation. As a result, campuses that applied the erroneous updates or fixes either incurred additional expense in reapplying these updates and fixes, or assumed the risk of system errors if they decided not to reapply them.

Furthermore, the university has not fully addressed its information security needs for CMS. The lack of security around a search feature in the PeopleSoft software apparently allows employees access to the confidential information of other employees and students beyond what is needed to do their jobs. In designing CMS, the university recognized that the structure of the PeopleSoft software provided no security around its search feature other than the option of removing access to it. In 1999, the vice chancellor for human resources expressed concern that employees had access to confidential employee information when using the search feature. Although the university at the time had not begun implementing the student administration application, the human resources and student administration applications are integrated into one database. The integrated software would allow student administration users to access the confidential information of employees, and human resources users to access that of students. Therefore, to address the vice chancellor's concern, the software was modified to restrict confidential information from being viewed by employees using the search feature.

Employees using the CMS search feature have access to confidential information, namely students' and employees' Social Security numbers, dates of birth, and gender.

Nevertheless, when the university implemented its most recent version of the human resources application, it chose not to reapply this modification to the new version, as it was now planning to implement the student administration application. Not reapplying this modification would allow employees using the search feature to access confidential information, namely students' and employees' full Social Security numbers, dates of birth, and gender information.

According to a chancellor's office analysis of the issue, the decision not to reapply the modification enabled the most effective searches. The benefits cited by the chancellor's office for this decision were to minimize the number of duplicate records in the system, realize time and labor savings, and eliminate a modification that complicates the upgrade and maintenance processes. Also, the senior director for the CMS project states that the university determined that human resources and student administration users need access to the confidential information of all students and employees to do their jobs because otherwise they would not be able to use the capabilities in the CMS search feature to retrieve information about an individual who may have had one or even many prior roles at the university. Further, the senior director stated that, even though they may have access to confidential information of additional individuals, employees are expected to respect the

confidentiality of this information for any individuals for which they have access. However, this assertion raises the question of why the university initially implemented a modification to restrict the confidential information.

When it decided not to reapply the first modification, the university noted that a second modification may have helped resolve the problem. It considered that modification to be costly and not supported by PeopleSoft, so the modification never was developed. Instead, when identifying alternate solutions, the chancellor's office coupled the removal of the first modification with the implementation of a policy on "sensitive" information, which would place the responsibility for privacy on employees by requiring them to sign confidentiality agreements before getting access to the system. Although the chancellor's office identified the need for a policy on sensitive information during the software design phase, it did not establish a policy requiring that campuses implement the use of confidentiality agreements for all employees with access to the system. According to the senior director for the CMS project, some campuses have chosen to require their employees to sign confidentiality agreements before giving them access to CMS. For example, staff at one campus we visited told us the CMS software allowed many campus employees access to the confidential information of other campus employees and students beyond what is needed to do their jobs. The project director believes that the campus mitigates any risks by requiring employees with this access to sign confidentiality agreements and attend training before access is granted to them. Although some campuses may have taken some steps to try to mitigate the security issue; nevertheless, because of the limitations of the software cited by the university, it is implementing an administrative system with less than optimal information security.

The university did not ensure that the CMS software provided adequate password management.

Likewise, the university did not ensure that the CMS software provided adequate password management, such as enforcing minimum password length, requiring frequent password changes, revoking the password after five failed log-in attempts, and not allowing reuse of previously used passwords. The university acknowledged that campuses cannot enhance CMS password management and purchased additional software security tools to mitigate that deficiency, but it had installed this additional software at only one campus as of November 2002. The university says the newest versions of the CMS software will incorporate many of the password management features that have been missing. Campuses can use these new features once

they install the newest version of the CMS software applications. As of December 2002, nine of the 11 campuses that installed the initial version of the human resources application had installed the newest version with enhanced password controls. However, 14 campuses have installed the initial version of the finance application and are not scheduled to use the newest version until 2004, leaving them without the enhanced password controls for their finance applications.

THE UNIVERSITY'S WEAK INITIAL PLANNING AND LIMITED REPORTING EXPECTATIONS HAVE LED TO QUESTIONS ABOUT WHETHER THE PROJECT WILL ACHIEVE ITS BUSINESS OBJECTIVES

Doubts about CMS fully accomplishing its business objectives and achieving the potential of a systemwide implementation can be traced to the university's weak efforts early in the planning process and limited expectations with regard to systemwide reporting. Proper project management practices and planning is essential for success in IT project procurement, design, development, implementation, and final project quality. Although the university used some recommended project management practices during the project's design and development phase, its initial planning did not adequately ensure that it would fully meet its CMS business objectives.

The University Did Not Sufficiently Evaluate Its Business Processes Before Procurement

Before purchasing the software, the university did not sufficiently evaluate its specific business processes to understand up front which business processes the potential vendors' software products could accommodate and which software products would require modification to meet its business needs. Technical evaluations of potential software products were not designed to gain an understanding of the extent of needed modifications. Thorough evaluations of its business processes before it purchased the software would have helped the university make an informed decision about what software product would fit its needs best and be the least costly to install. Failing to make these evaluations up front, the university had no basis to anticipate the extent of software modifications it eventually would make or the loss of functionality some campuses would experience.

The university had no basis to anticipate the extent of software modifications it would eventually make or the loss of functionality some campuses would experience.

The university is conducting its business process evaluations as it starts developing modifications to each PeopleSoft software application. Function teams compare campus needs against software capabilities to identify the software functionality that fits the campus business process requirements, as well as to identify the software functionality gaps. After these gaps are identified, a prototyping team designs the software modifications and proposes them to the university. If the university approves, a technical team develops the modifications to the vendor software to create the final CMS software. As discussed previously, the university has had to make about 200 modifications to the initial versions of the PeopleSoft software.

The senior director for the CMS project contends that evaluating the university's business processes before purchasing the software would not have indicated the number or cost of the modifications to be made, as she believes this would have had to be done in the work sessions that occurred once the PeopleSoft software was purchased. She further states that doing so might have resulted in a less efficient process because the university is first looking at the processes in PeopleSoft to determine if they would work for the university before modifying the software. Also, she believes that reviewing business processes before procurement might have diluted the opportunities to change these processes. Finally, the senior director contends that the university would incur more consulting expense because it would have to evaluate its business process before and after purchasing the software, as she believes that simple reengineering would not guarantee a fit with the PeopleSoft software.

A substantial amount of evaluation could have been performed by the university before it purchased the software to better understand how its business processes fit with the software products it was considering.

We recognize that some business process evaluation would need to take place after the university purchased its software. However, the university could have performed a substantial amount of evaluation to understand better how its business processes fit with the software products for the two finalist vendors that it considered during the procurement. Also, at the time it purchased the software, the university was planning to implement software for a voluntary collaborative of campuses rather than systemwide at all the campuses, as we discuss in Chapter 4. However, whether the project was a collaborative endeavor or a systemwide project such as CMS became, the university needed to have a clear understanding of how well the software it was purchasing would meet its needs.

Maximized Systemwide Reporting Was Not an Intended Benefit of CMS

The university plans to continue to use existing processes for systemwide reports because it did not design CMS to replace these processes. Not achieving the full potential from installing a single university-wide suite of administrative software can be traced to the university's conscious decision to limit this capability.

It was a conscious decision on the part of the university to continue to use existing processes for systemwide reports rather than design CMS to replace these processes.

According to the assistant vice chancellor for business planning and information management, "In a major planning effort conducted in 1995 and 1996, the senior management of the [university] endorsed the corporate data principle that 'data collected and maintained should be no more than that required to perform the functions established by senior management for the chancellor's office.' " Apparently, the university believes that a single corporate data warehousing operation that provided chancellor's office employees access to systemwide information at the same level of detail collected at the campuses and at the same time that campus-level detail is available to campus employees would be inconsistent with this principle.

The university chancellor informed us in a December 2002 letter as follows:

> "I believe it is essential that campus presidents and their management be held responsible for validating and ensuring the accuracy of their campus' data. Direct access by systemwide staff to campus day-to-day data is not what I envisioned as part of the CMS project. I expect that campus data, validated by campus management, will come to the corporate data warehouse for use by the staff in the system offices."

However, as discussed previously, the corporate data warehouse is not intended to hold a type or level of information substantially different from the data it currently holds; the primary difference will be that the information will come from CMS as opposed to the prior systems. We recognize that each campus should be responsible for the accuracy of its data; however, we presume each campus is ensuring the accuracy of the data it is making available to the faculty, staff, and students and that the same level of accuracy would be sufficient for the chancellor's office staff. Thus, it is unclear why data accuracy would be a reason to not have a corporate data warehousing operation for CMS systemwide reporting purposes.

In his December 2002 letter to us, the chancellor goes on to say the following:

> "CMS will (and does) 'provide ready access to current, accurate and complete administrative information and the means to use it in an efficient manner' on campuses as well as on a systemwide basis. Campus access is by design more 'ready' in that campuses can directly access campus data. 'Ready' access at the chancellor's office as in any large collaborative system, does not require desktop access to all individual campus information. 'Ready' in this model includes the concept of rapid delivery of information from campuses in a common format, based on common data definitions and elements. It also includes the higher level of confidence that each campus can quickly generate comparable information using common reporting structures and procedures that will assure accurate, common data, using standard definitions."

The university's current view on the "ready" access to information provided by CMS is difficult to reconcile with the university's stated vision.

Although an interesting perspective, the chancellor's viewpoint seems difficult to reconcile with the university's stated vision that "the [integrated technology strategy] will produce an integrated electronic environment that enables all [university] students, faculty, and staff to communicate with one another and to interact with information resources from anyplace, to anyplace, at anytime."

The chancellor also told us the following in his December 2002 letter:

> "In the past, campuses were able to report specific campus data; however, that data was often not comparable across campuses and was suspect in its accuracy. For example, we have been consistently incapable of deriving costs for technology expenditures with a high degree of confidence and accuracy. With CMS in full implementation, I expect that I will be able to request expenditure reports on technology and have the confidence that the data will be comparable from campus to campus and that it will be accurate based on the common set of definitions we have applied across the system."

However, the financial application currently being implemented will not give the chancellor the capability he describes. Nevertheless, we recognize that for additional cost, each subsequent version of the financial application can be installed at each campus and can bring more consistency than the current releases.

In fact, the university recently began to address some of the problems with uniform coding needed to meet systemwide reporting needs in the finance application. In May 2002, the university began addressing systemwide financial reporting for the CMS project, and in July 2002 it approved a modification for the next version of the finance application—release 8.4—that is under development. According to university documentation, this version will create an end-to-end audit trail, standard chart fields, and standard definitions. As of December 2002, the university expects that campuses will begin implementing this new release in July 2003 and expects it to be used at all campuses by July 2006. However, until campuses implement this new version of the finance application, the university will be without uniform coding to meet its systemwide financial reporting needs.

The University Did Not Establish an Effective Quality Assurance Function

Another planning weakness of the CMS project is that the university did not establish an effective quality assurance function, which might have reduced the need to rework software fixes and improved information security. Recommended project management practices dictate a quality management plan to provide the overall framework to ensure project quality. Such a plan allows employees to understand, implement, and maintain quality at all levels of the information technology project. However, the university has not established a quality management plan for the CMS project. It does have processes to design, develop, and test software modifications according to plan specifications, and it has adequate change control policies and procedures for the CMS project. However, until recently, the responsibility for these processes was assigned to the same team doing the work, without review by a quality assurance team. A quality assurance team is intended to help identify and assess the significance of quality problems that occur as the project progresses and to help minimize project risks by identifying potential problems earlier in the project development and implementation phases. After more than three years of designing, developing, and implementing the CMS project, the university only recently began establishing a quality assurance group. In November and December 2002, it hired two quality assurance analysts to focus specifically on development of software modifications.

After more than three years of designing, developing, and implementing CMS, the university only recently began establishing a quality assurance group.

The university has never hired an independent oversight consultant to perform various quality assurance functions and to evaluate the progress of the project, nor does it plan to do so.

Independent oversight consultants help ensure that appropriate project management practices are implemented and followed throughout the project's life. Hiring an independent oversight consultant may likely have assisted the university in identifying and addressing quality assurance and information security deficiencies earlier in the CMS project.

THE UNIVERSITY'S PROCUREMENT APPROACH DID NOT SHARE PROJECT RISK WITH VENDORS AND CONSULTANTS

The university's procurement approach of identifying, procuring, and implementing its own solution caused it to assume substantially all the responsibility for the CMS project, sharing little if any project risk with vendors and consultants. As a result, it assumed the considerable financial and business risk involved in ensuring that the software meets its business needs and is implemented successfully at campuses.

By procuring its own CMS solution through a piecemeal approach, the university effectively assumed nearly all responsibility for project success and for the risk of an unsuccessful project. The university's procurement of software for the CMS project in September 1998 resulted in it agreeing to pay PeopleSoft $33 million for the right to use the software for the next eight years, and for an initial amount of training and consulting services. The contract was ultimately amended to $37 million for additional software products and maintenance. It then hired consultants on an hourly basis to help it identify campus business needs, to design and develop the modifications needed for the software, and to help implement this software at campuses throughout the university system. It believed that, without using consultants, it could not rapidly find enough people with the skills and experience needed to ensure successful implementation.

The university could have entered into a contract that paid the firm only upon completion of key deliverables.

However, the university could have structured its procurement so that, in return for a fixed fee, the winning firm would be responsible primarily for the successful implementation of whatever software product the university decided to use. The university then could have entered into a contract that paid the firm only upon completion of key deliverables, such as the successful modification of functionality elements within the software to meet the university's needs. Structuring contracts to pay only after deliverables have been tested and accepted is

a recommended procurement practice. Instead, the university chose to purchase only the software, and it is conducting the substantial amount of work, with the assistance of consultants paid through additional contracts, necessary to ensure that the software is modified and implemented properly. The university concluded that it was best for it to modify and implement the software but it never performed sufficient analysis to determine that a university installation provided the best value.

The university has attempted to implement CMS without the benefit of a diagram that shows the relationship among the many database tables used by the software.

Further, the university has attempted to make a best-value implementation without the benefit of a diagram that shows the relationship among the many database tables used by the PeopleSoft software. When we were performing our analysis of CMS costs, we asked the university for the entity relationship diagram that would show the relationship among tables and how the information interrelates among certain tables. We were informed that it does not have an entity relationship diagram for the PeopleSoft system. When we inquired as to why the university does not have a copy of the entity relationship diagram, we were informed that there was an additional cost from PeopleSoft for this information. The university is assuming all the financial and business risk for the successful implementation of CMS, so a diagram showing its staff how the tables in the system interrelate with each other would seem like a prudent item to include in the purchase price of the software. Although we recognize that certain consultants may understand these relationships, the lack of the entity relationship diagram may impede the implementation of the system in the short term and may make the university more dependent on consultants in the long term.

It also did not share risk when it procured consultants to assist in modifying and implementing the software. The chancellor's office and the campuses we visited typically pay consultants on an hourly basis rather than for the delivery of accepted work products. For example, to adapt the software to meet its business needs, the chancellor's office hired consultants to lead the process of examining the software to see if business processes can be accommodated or whether programming modifications will be required or business processes adjusted. Chapter 2 and Appendix D provide more details on the consultants employed by the university and their respective payments. Rather than have the consultants propose a fixed price for the work and pay only after accepting delivered work products, the chancellor's office paid the consultants monthly for the hours billed at their preestablished hourly rates. The campuses we visited also

generally followed the practice of paying consultants on an hourly basis rather than at fixed prices for the various work products. The university exposes itself to the risk of paying for services that do not meet its needs when it pays consultants before testing and accepting work products.

When the university pays consultants before testing and accepting work products, it exposes itself to the risk of paying for services that do not meet its needs.

For one of the more recent CMS software development and implementation efforts, the student administration application, the university shared some project risk with consultants by structuring the agreement so it contained a fixed-fee component that linked payments to project milestones. The agreement's fixed-fee component is paid through monthly payments that increase upon completion of two key milestones. Specifically, the chancellor's office entered into an agreement with a consultant for developing and implementing the student administration application through a pilot project on two campuses and the chancellor's office. The chancellor's office structured the payment terms so the CMS software development was on a time-and-materials basis, while campus implementation services were on a fixed-fee basis.

However, the effectiveness of the chancellor's office risk-sharing concept may be diluted when campuses issue additional consultant work orders. For example, we noted that one pilot campus issued a work order that was on a time-and-materials basis to the same consultant during the same period for work outside the pilot project. Further compounding this problem is that time-and-materials orders can be more difficult to manage. For instance, because the consultant exceeded the $115,000 time-and-materials estimate and the time period stated in the work order, this same campus had to increase the work order to pay an $82,000 outstanding invoice for work the consultant performed beyond the terms specified in the initial order. The campus project director believes a material billing error is highly unlikely but acknowledges that there were no processes to ensure that the consultants working for the campus and the chancellor's office were not billing both or that the hours detailed on the consultant invoice were for the appropriate work order. Nevertheless, the effectiveness of the chancellor's office fixed-fee terms could have been diluted by campus work orders on a time-and-materials basis such as this one.

RECOMMENDATIONS

To ensure that it minimizes the costs and time to implement and maintain its CMS software, the university should do the following:

- Reassess the design of CMS and evaluate the economies that can be achieved by reducing the number of separate CMS databases throughout the university that currently must be tested separately when campuses implement software revisions that reflect modifications and upgrades.

- Continue its recently established practice of tracking the actual hours spent to develop modifications to the CMS software. It should consider this information when estimating the costs and time associated with developing and applying future modifications to new versions of the vendor software, and when evaluating the associated maintenance costs in reapplying, testing, and implementing its current and future modifications.

- Define the scope and associated costs of CMS by identifying the specific functionality that is necessary to achieve the university's expectations expressed in the CMS project charter. Further, examine the costs associated with campuses' plans to add functionality elements to increase functionality beyond this defined scope.

Also, when procuring information technology systems or software in the future, the university should evaluate its specific business processes against vendor products before procurement, then select vendors that best accommodate the university's specific needs.

To ensure that it provides ready access to current, accurate, and complete administrative information and the means to use this information effectively as well as to establish standards to share information for common reporting purposes, the university should determine how it could improve the design of CMS to report systemwide information. Additionally, it should establish a minimum level of functionality that all campuses must implement to facilitate this reporting.

To ensure that it adequately addresses CMS project quality and information security, the university should:

- Establish a quality management plan and continue its efforts to establish an effective quality assurance function for the CMS project.

- Consider hiring an independent oversight consultant to perform various quality assurance functions and to evaluate the progress of the CMS project.

- Establish a policy on sensitive information requiring that campuses implement the use of confidentiality agreements for all employees with access to CMS.

To ensure that it uses recommended practices in its future procurements, the university should plan project procurements to share risk with vendors and consultants, such as allowing them to propose their solutions and structuring contracts to protect the university's interests, including provisions to pay only after deliverables have been tested and accepted. ■

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CHAPTER 4

The Processes the University Used to Select the Software Vendor and Consultants on the Project Did Not Clearly Demonstrate Best-Value Procurements

CHAPTER SUMMARY

The California State University's (university) processes to select the software vendor and consultants for the Common Management System (CMS) project did not clearly demonstrate best-value procurements that consider both quality of proposals and overall costs. The procurement process by which the university selected a single CMS software vendor raises questions about whether the university used a fair and objective competitive process. Although its solicitation document did not provide for a method to select only one vendor, the university decided late in the process that it needed such a method. When the selection narrowed to two vendors, the university did not use a quantitative scoring process to select a best-value vendor objectively. Likewise, the university could not demonstrate that it resolved issues the procurement evaluation teams raised. Further, the university based its procurement decision on a cost analysis comparison of the two vendors that did not compare costs for a systemwide implementation and that was based on a fraction of the actual maintenance and operations costs now estimated.

Moreover, the university's practice of employing consultants to work on the CMS project without appropriate competition raises more questions about the propriety of its business dealings. The university hired consulting firms under sole-source contracts for reasons that appear questionable. Finally, although it recommends discussions with consulting firms about scope of work and rates, the university does not require the solicitation of offers from more than one prequalified consultant with university-awarded master agreements. As a result, the university has not always solicited offers from multiple prequalified consultants before procuring their services and, therefore, cannot demonstrate that it procured best-value services.

THE UNIVERSITY'S SELECTION OF THE CMS SOFTWARE VENDOR WAS PROBLEMATIC

When the objective of the CMS software procurement changed from selecting one or more vendors to selecting one vendor, the university continued with the procurement process, even though its solicitation document did not provide for a method to select only one vendor. Not restarting the process or formally modifying the process when its procurement objective and methodology changed raises questions about the propriety of the procurement process used in the CMS software vendor selection.

The Procurement Objective for CMS Software Evolved from Identifying One or More Vendors to Selecting One Vendor

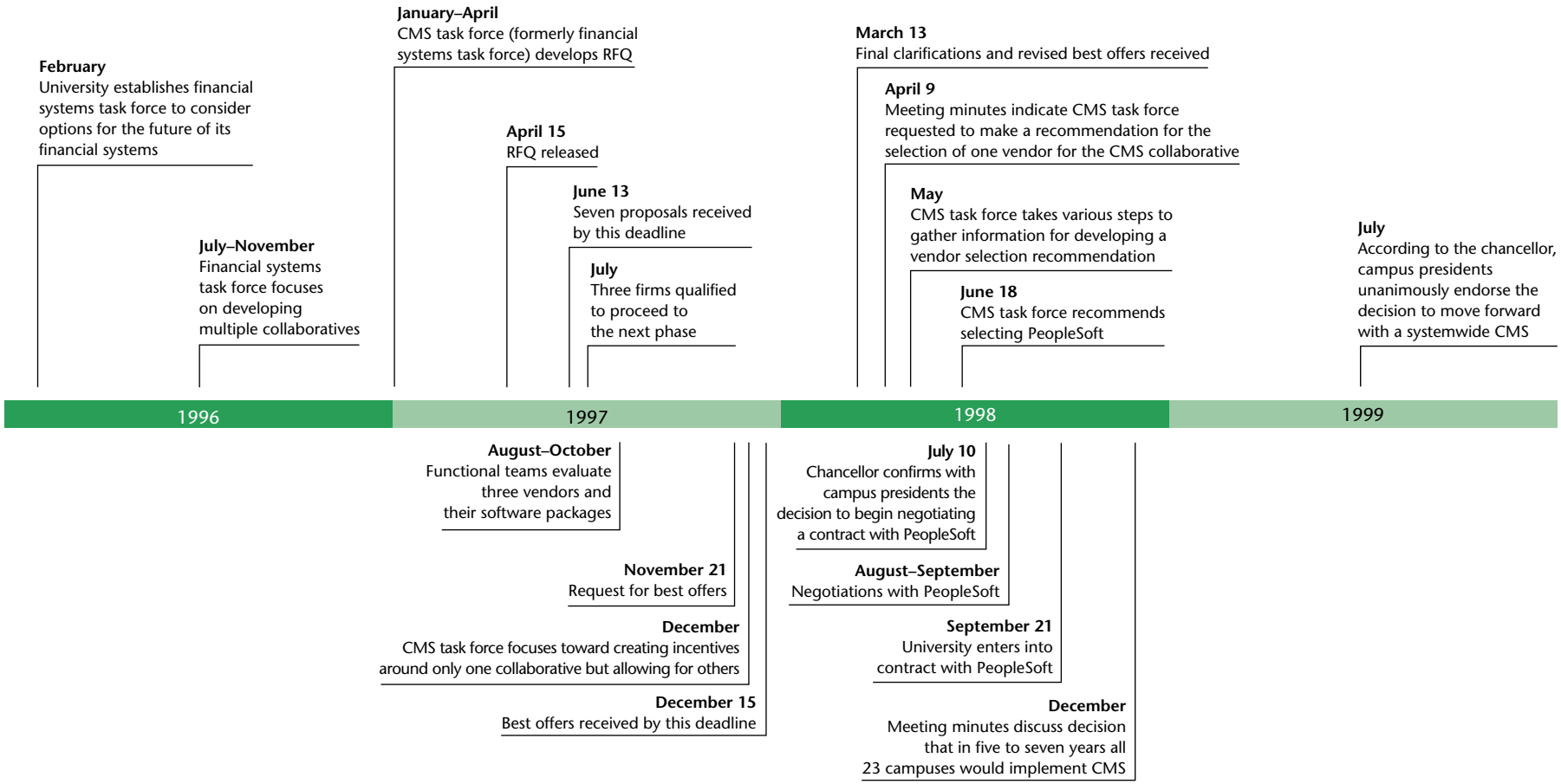
The original intent of the CMS software procurement was to identify one or more software vendors that one or more campus collaboratives could select.

A university task force, formed in 1996 to consider replacing financial systems, started the procurement process in 1997 with an objective of identifying one or more software vendors to provide integrated systems that also included student and human resources services. These vendors then could be selected by one or more campus collaboratives, voluntary groups of campuses using shared resources to select the best administrative software suite for their respective campuses. Because campuses with varying needs for administrative software preferred various software vendors, the university considered establishing contracts with various vendors from which campuses could choose. Therefore, in April 1997, the university issued a solicitation document, a request for qualifications (RFQ), that planned for a process to select one or more vendors for one or more collaboratives. Figure 6 provides a timeline of the events for the CMS software procurement process.

Seven vendors responded in June 1997 to the university's RFQ, and in July 1997 the university qualified three to proceed to the next procurement phase. Using various teams—finance, human resources, student administration, and technical—to evaluate the software of the three qualified vendors, the university passed all three vendors to the best-offer phase. In November 1997 the university requested the three vendors to provide their best offers that identified the benefits of multiple campus licenses. In December 1997, the university received these offers and began to analyze various cost scenarios with the objective of providing cost information to campuses to assist them in deciding on their participation in a collaborative. The university subsequently requested additional information and updated offers from vendors, receiving them in March 1998.

FIGURE 6

CMS Software Procurement Timeline


February
University establishes financial systems task force to consider options for the future of its financial systems
July–November
Financial systems task force focuses on developing multiple collaboratives
January–April
CMS task force (formerly financial systems task force) develops RFQ
April 15
RFQ released
June 13
Seven proposals received by this deadline
July
Three firms qualified to proceed to the next phase
March 13
Final clarifications and revised best offers received
April 9
Meeting minutes indicate CMS task force requested to make a recommendation for the selection of one vendor for the CMS collaborative
May
CMS task force takes various steps to gather information for developing a vendor selection recommendation
June 18
CMS task force recommends selecting PeopleSoft
July
According to the chancellor, campus presidents unanimously endorse the decision to move forward with a systemwide CMS
1996
1997
1998
1999
August–October
Functional teams evaluate three vendors and their software packages
November 21
Request for best offers
December
CMS task force focuses toward creating incentives around only one collaborative but allowing for others
December 15
Best offers received by this deadline
July 10
Chancellor confirms with campus presidents the decision to begin negotiating a contract with PeopleSoft
August–September
Negotiations with PeopleSoft
September 21
University enters into contract with PeopleSoft
December
Meeting minutes discuss decision that in five to seven years all 23 campuses would implement CMS

Source: The university's contracting and procurement documents and committee meeting minutes and notes.

However, during the final stages of the procurement, the university changed its objective from considering one or more vendors for one or more collaboratives to selecting only one software vendor for a single collaborative. By December 1997, the CMS task force (formerly the financial systems task force) began focusing toward creating a financial incentive for campuses for only one collaborative. In April 1998, the university decided to select a single software vendor for the CMS software. It acknowledged that multiple collaboratives still could form around different software vendors, but concluded there should be only one collaborative that received financial incentives from the chancellor's office for ongoing operations. In May, the CMS task force gathered more information by requesting additional clarifying information, attending additional vendor demonstrations of vendor systems, and conducting evaluation team visits to other university systems that were using the vendors' software. In July 1998 this lengthy procurement process resulted in the university deciding to negotiate a contract with PeopleSoft as the software vendor for the CMS project. Although its process had qualified two other vendors, the university never negotiated contracts with them.

During the final stages of the procurement, the university decided to select a single software vendor.

The university entered into contract negotiations and in September 1998 executed a $33 million contract, ultimately $37 million after amendments, with PeopleSoft for software licensing, training, and some consulting services. Effectively purchasing a systemwide license for software available to all campuses, the university thereby created a de facto standard for systemwide administrative software. Minutes from a CMS implementation steering committee meeting in December 1998 show the university had determined that all 23 campuses would implement CMS in five to seven years and that it now needed to determine the costs and resources necessary to make this happen. According to the chancellor, in July 1999 campus presidents unanimously endorsed the decision to move forward with a systemwide CMS.

Not Restarting or Formally Modifying the Procurement Process When the Methodology Was No Longer Compatible With Its Objectives Raises Questions

Not restarting or formally modifying the procurement process when its methodology was no longer compatible with its procurement objectives raises questions about the propriety of the university's CMS software vendor selection process. When it became apparent that it needed to select a single vendor, a year

into the process, the university hastily created an additional step—a final evaluation process to identify and select a single software vendor for the collaborative that was to receive financial incentives from the chancellor's office.

The university's RFQ did not outline a process to select a single vendor.

The university's procurement process was not geared initially to identify a single vendor. Although the CMS solicitation document, the RFQ, outlined four phases—qualification, discovery, best offer, and final negotiation—none provided for selecting a single vendor. Rather, the RFQ provided for an evaluation of vendor responses to qualify vendors to participate in subsequent phases. Although one evaluation team performed some scoring as we discuss later, the RFQ did not provide a scoring method to select a single vendor. Also, its final phase outlined a process for discussions to finalize contracts with vendors who were successful in the previous phases, whether it was one or more vendors. This process was problematic because late in the process—April 1998, four months after it first received "best offers" from the vendors—the university decided to recommend a single vendor. Thus, the university needed an evaluation process that demonstrated it objectively surfaced the best-value vendor, considering both the quality of the vendors' proposals and the costs associated with the vendors' offers. However, the university did not restart the process by issuing a new RFQ that defined the evaluation process that was to be used to select a single vendor. Additionally, it did not formally modify the process by notifying the potential vendors in writing that it was changing the overall process outlined in the RFQ, nor did it inform them of the specific process by which it now expected to evaluate the vendors to select a single winner. Instead, it simply proceeded with an evaluation process to select a winning vendor.

According to the executive vice chancellor and chief financial officer (executive vice chancellor), the university believes the evaluation and scoring conducted to select the CMS vendor was comprehensive and sufficient to meet any test of objectivity. The executive vice chancellor says the university evaluated vendors on criteria in the RFQ, as reported by the CMS task force in a document prepared in June 1998. The document focused only on PeopleSoft and the Systems and Computer Technology Corporation (SCT) because the university concluded that one of the three vendors being considered—Oracle—could not demonstrate that it could offer a student administration product. The document states that the significant potential for future opportunities and flexibility were the primary factors differentiating the two vendors; functionality and

ability to deliver were judged to be comparable. Although the technological foundation of both products was considered acceptable, several aspects of the PeopleSoft architecture, such as more tightly coupled modules providing for potentially better integration, were thought to have an advantage over that of SCT. Finally, the task force document concluded that, although both vendors were financially viable, PeopleSoft was more favorably positioned financially for the increasingly competitive market environment.

The university did not use a weighted scoring process to select a best-value vendor objectively.

However, the university's evaluation process did not use a weighted scoring process to select a best-value vendor objectively. For the two finalist vendors, the CMS task force's document simply placed positive and negative comments into plus and minus categories for various product dimensions and the vendor-client relationship. Because the university did not use a quantitative, weighted scoring evaluation process, we could not tell whether one factor carried more weight than another and to what degree one plus or minus comment was better or worse than another plus or minus comment.

The University Could Not Show That It Resolved Evaluation Teams' Concerns About Potential Vendors and Discounted Some Information Favoring the Vendor Not Chosen

Further, the university could not demonstrate how it evaluated and resolved the evaluation teams' various concerns and comments in the earlier discovery phase in fall 1997. Each evaluation team reported its evaluations and concluded that all three vendors (Oracle having not yet been excluded) should continue to the best-offer phase of the procurement process. However, along with positive comments, some teams reported concerns or negative comments for each software vendor. The university could not provide us with documentation demonstrating how it resolved, mitigated, or acknowledged acceptance of the risks associated with these concerns for any vendor being considered. Especially problematic, the university could not demonstrate it did this for the selected vendor. For example, the student administration function team reported several concerns about the PeopleSoft product that appeared to be significant. The team's September 1997 report included comments about the PeopleSoft product such as, "the base product as shown is much more labor intensive than current system," and, "[we have] serious concerns about meeting [university] functionality requirements," and, "see no vision for the student systems other than to create a 'completing piece'

for their [human resources] and finance systems." Further, although the RFQ did not have a scoring process, the student administration team scored SCT higher than PeopleSoft in 13 of the 15 categories evaluated. The financial team reported that SCT's product basically met all the university's requirements, whereas PeopleSoft lacked in accounts receivable, student revenue processing, grant processing, and student housing financial matters. In May 1998 the university gathered more information about the vendors and their software, observing vendor product demonstrations and performing site visits to out-of-state university systems. Although this additional information may have resolved or mitigated many of the evaluation teams' concerns, without documentation, the university cannot show that it addressed them adequately.

Although additional information gathered by the university may have resolved or mitigated evaluation teams' concerns, the university cannot show that the concerns were addressed.

The university also discounted other information that favored the vendor not chosen, thus raising more questions about its procurement process. For each vendor asked for a best offer in November 1997, the university provided survey results showing campus interest in the vendor. This survey shows that 13 campuses indicated a high interest for SCT, while only three indicated a high interest for PeopleSoft. The university's executive vice chancellor said the university selected the CMS software vendor on a variety of factors, not just on factors where one vendor may have an advantage at one point in time. Also, the executive vice chancellor said the university's selection criteria placed value on PeopleSoft being a visionary in the industry. In April 1997 a Gartner Group "industry scan" report, a university-commissioned study to evaluate educational software vendors, did identify PeopleSoft as a "visionary" and SCT as a "leader." However, the Gartner Group reported that visionaries have "strong market vision but unproven execution capability," whereas leaders have "strong visions about market trend and direction . . . and have successfully demonstrated their execution capabilities." Therefore, according to the university-commissioned study, both vendors had strong vision, but SCT had proven execution capabilities. Although the university may have had valid reasons for deciding to select PeopleSoft, its inability to show how it resolved these discrepancies cast some doubt on the appropriateness of its CMS software procurement process.

The University Could Not Show How It Determined That Cost Differences Between the Competing Vendors Were Immaterial

When asked whether the university compared overall costs of each vendor's software, the executive vice chancellor pointed us to the June 1998 document where the CMS task force indicated that the cost differences between PeopleSoft and SCT were relatively immaterial. However, the university could not provide an analysis that demonstrated the differences were immaterial, nor explain the threshold it considered to be material. The university's April 1998 estimates of each vendor's costs, used during the procurement decision, are shown in Table 9.

TABLE 9

The University's Estimate of Campus Participation Costs for the Two Finalist Vendors in the CMS Software Procurement

Campus Size		PeopleSoft	SCT
Small	One-Time*	$4,758,272	$3,441,778
	Annual†	181,403	182,410
Medium	One-Time*	5,295,467	4,340,680
	Annual†	259,431	257,254
Large	One-Time*	5,947,177	6,203,910
	Annual†	344,525	378,028

Source: The university's April 1998 CMS Vendor Cost Summary.

* The university calculated the estimated one-time cost assuming a 10-campus collaborative.

† The university calculated the estimated annual recurring costs to campuses assuming a 10-campus collaborative. These annual costs are net of $408,500 in post-implementation costs, which were expected to be covered by the chancellor's office through an incentive to support a team of university staff and consultants for maintaining the software.

The estimates in Table 9 present the university's estimated one-time and ongoing costs that a small, medium, or large campus should expect to incur for participating in a 10-campus collaborative with PeopleSoft or SCT. However, the university's RFQ did not provide for a comparison of overall vendor costs, nor did the university compare total vendor costs for a 10-campus collaborative. In fact, it did not have a particular collaborative in mind. According to the chief of staff for information technology services, the university's intention was only to provide individual campuses with cost information for deciding whether to join a collaborative or to understand the costs

involved for those campuses already committed to participation. The university's analysis was not meant to estimate overall costs to the collaborative, let alone costs for a systemwide implementation of the vendor software. Thus, it is unclear how the university concluded cost differences between the two vendors were immaterial.

The Procurement's Cost Analysis Was Based on a Fraction of the Costs Being Incurred to Implement CMS

The cost analysis on which the software procurement was based represents just a fraction of the one-time and annual costs of the CMS project that is being implemented. Therefore, at the time the university was considering the CMS software procurement, it did not use a realistic estimate of the complete costs to implement and maintain the software. Using the information from Table 9 and assuming eight large, eight medium, and seven small campuses, the one-time costs to implement the system using PeopleSoft software at 23 campuses would be $123 million and the annual maintenance and operating costs would be $16 million. These amounts do not include the $408,500 annual incentive each campus could expect from the chancellor's office, which totals $9 million for 23 campuses. In comparison, based on the June 2002 cost survey, for the CMS project now being implemented, the one-time costs are expected to be $393 million and the annual maintenance and operating costs $65 million once CMS is installed at all campuses.

The disparity between the procurement and the later estimates suggests the university either did not consider or significantly underestimated project costs.

This disparity between the procurement and 2002 estimates suggests the university either did not consider or significantly underestimated one-time costs and annual costs. Some of these costs could not have been included because, as discussed in the previous chapter, the university did not sufficiently evaluate its business processes to understand the costs to modify and maintain the software for which it was seeking bids. Further, the university assumed that the costs of certain aspects of the system would be the same regardless of the vendor, even though it provided us with no analysis supporting this assumption. This unsupported assumption is especially bothersome because of the size of the $65 million anticipated for ongoing maintenance and the striking difference between that amount and the $16 million considered by the university in its analysis.

THE UNIVERSITY'S SELECTION OF CMS PROJECT CONSULTANTS IS TROUBLESOME AND DOES NOT ENSURE BEST VALUE

Since early in the CMS project, the university established a pattern of awarding sole-source consulting contracts for reasons that appear questionable.

The university's practice of awarding CMS project contracts to consultants without appropriate competition is troublesome and does not ensure that the university receives the best value. The university's policy manual for contracting and procurement says the university is to promote fair and open competition to the maximum extent possible. The policy states that, except when necessary for the immediate preservation of the public health, welfare, or safety, or the protection of university property or programs, sole-source contract procurement is permissible only upon determination that only one source exists for the required product or service. However, since early in the CMS project, the university has established a pattern of awarding sole-source consultant contracts for reasons that appear questionable. Further, the university has facilitated chancellor's office and campus selection of consultants from university master agreements without requiring the solicitation of offers from more than one prequalified consultant to ensure best value.

The University Effectively Hired PeopleSoft as a Sole-Source Contractor

Early in the CMS project (October 1998), the university hired consultants from PeopleSoft without additional competition. Although the prior contract with PeopleSoft (the September 1998 CMS software vendor contract) provided for initial training and consultant time, the chancellor's office entered into a second contract with this vendor for additional consulting services for the chancellor's office and for campuses. However, the second PeopleSoft consulting contract was effectively sole-sourced. Further, PeopleSoft was excused from participating in all of a later qualification process for other consultants and allowed to continue with its previously sole-sourced contract. Such actions do not seem to promote the university's policy of fair and open competition. As of June 2002, the chancellor's office and campuses expected to spend about $12 million on PeopleSoft consulting services under this second contract.

According to the university's director of contract services and procurement, the process the chancellor's office used to enter into this second PeopleSoft contract was based on the master agreement awarded to PeopleSoft a month earlier, as an outcome of the CMS software vendor RFQ effort. The director of contract

services and procurement stated that a separate contract governing consulting services was needed because the PeopleSoft master contract primarily addressed software licensing and maintenance. The director further stated that PeopleSoft was the primary source for technical expertise on its software at that time. Thus, the university effectively hired PeopleSoft to provide consulting services through a sole-source procurement. However, it subsequently identified numerous vendors with PeopleSoft expertise. In fact, as shown in Appendix D, non-PeopleSoft consultants are being paid for much of the CMS project work that the university now outsources. Moreover, when the chancellor's office solicited for additional consultants in February 1999, less than four months after the October 1998 contract, PeopleSoft did not go through the same qualification process as the other consultants. The chancellor's office scored, based on technical and cost considerations, proposals from 13 firms, including PeopleSoft. PeopleSoft received the lowest score, other than four firms that then were dropped from further consideration. However, the chancellor's office did not require PeopleSoft to continue through the qualification process. Instead, the director of contract services and procurement said that PeopleSoft, in essence, already had been prequalified as a partner and that another agreement established under this later procurement would not be needed.

When qualifying consultants to provide services for the CMS project, the university did not require PeopleSoft to go through the same process as the other firms it considered.

The University Hired Io Consulting as a Sole-Source Contractor

In April 1999 the chancellor's office hired another firm, Io Consulting, through a questionable sole-source procurement, saying one individual at that firm was needed as project manager for the CMS human resources application. Now, after many contract amendments that expanded the sole-source contract's scope, the chancellor's office paid Io Consulting about $5.1 million for the services of not one, but 10 individuals, calling into question the fairness of the university's procurement practices. The sole-source justification for the contract stated that, although the contract was to be with Io Consulting, the chancellor's office actually needed the specific expertise of one individual in the firm, citing his unique qualifications needed for the CMS project. Based on her previous work experience with this consultant, the newly hired senior director for the CMS project recommended the sole-source contract and vouched for the consultant's unique experience and knowledge. This arrangement expanded significantly, from a $350,000 sole-source contract for one consultant to a contract that continued until June 30, 2001, through seven amendments of the original—adding nine individuals and increasing the

Io Consulting's sole-source arrangement expanded through seven amendments from a $350,000 contract to a total contract of about $5.1 million.

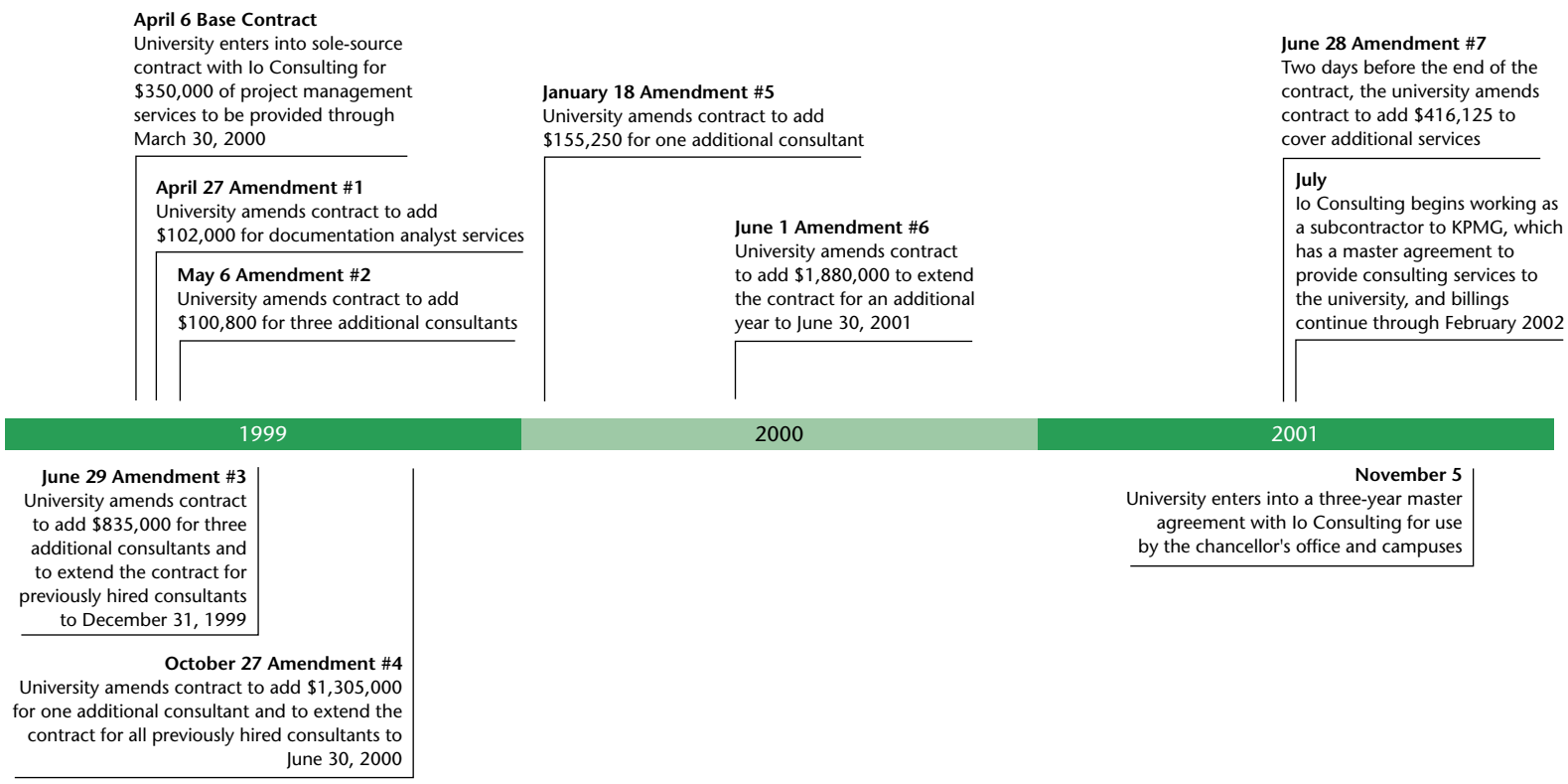
total contract amount to about $5.1 million. The chancellor's office relied heavily on Io Consulting to identify, design, and develop modifications for the CMS software, and to manage and direct both contract and university staff. Although citing sole-source justification of unique qualifications for Io Consulting, the chancellor's office simultaneously began to identify and qualify other firms to implement the CMS project. As previously discussed, the chancellor's office solicited for additional firms in February 1999 and in September 1999 selected seven of these firms to enter into master agreements—yet continued amending the sole-source contract with Io Consulting. Figure 7 gives a timeline of the events regarding Io Consulting.

Although the initial contract with Io Consulting focused on the services of one individual, the chancellor's office was well aware when it entered the initial contract that it was going to need additional consulting services. In fact, a project proposal incorporated into the contract stated that "additional resources from Io Consulting are available to begin work as early as May 1, 1999, on the functional and technical work that will be required for the successful completion of the project." However, rather than competitively procuring the needed resources, the chancellor's office simply brought in additional Io Consulting resources by continually amending the sole-source contract. Further, we noted that the chancellor's office did not always promptly execute amendments for the Io Consulting resources it added, executing several contract amendments after the additional consultants began work.

Moreover, when Io Consulting's sole-source contract was not extended further, it continued to work under an arrangement that, considered in conjunction with the repeated amendments to the sole-source contract, gives the appearance that the university was attempting to circumvent competitive bidding requirements. After more than two years, the chancellor's office did not extend the Io Consulting contract after the seventh amendment, and the sole-source contract ultimately ended on June 30, 2001. The university's director of contract services and procurement told us the contract was not extended because she advised the CMS project staff that any further contracts with Io Consulting should be validated by competition. But because the chancellor's office wanted to continue using Io Consulting on the CMS project, it had another consulting firm, KPMG, add Io Consulting, with higher hourly rates, as a subcontractor in July 2001. The university continued to use Io Consulting under this subcontracting arrangement through February 2002, paying approximately $684,000 for the services provided.

FIGURE 7

Timeline of the University's Contracting With Io Consulting


April 6 Base Contract
University enters into sole-source contract with Io Consulting for $350,000 of project management services to be provided through March 30, 2000
April 27 Amendment #1
University amends contract to add $102,000 for documentation analyst services
May 6 Amendment #2
University amends contract to add $100,800 for three additional consultants
January 18 Amendment #5
University amends contract to add $155,250 for one additional consultant
June 1 Amendment #6
University amends contract to add $1,880,000 to extend the contract for an additional year to June 30, 2001
June 28 Amendment #7
Two days before the end of the contract, the university amends contract to add $416,125 to cover additional services
July
Io Consulting begins working as a subcontractor to KPMG, which has a master agreement to provide consulting services to the university, and billings continue through February 2002
1999
2000
2001
June 29 Amendment #3
University amends contract to add $835,000 for three additional consultants and to extend the contract for previously hired consultants to December 31, 1999
October 27 Amendment #4
University amends contract to add $1,305,000 for one additional consultant and to extend the contract for all previously hired consultants to June 30, 2000
November 5
University enters into a three-year master agreement with Io Consulting for use by the chancellor's office and campuses

Source: University contract and payment documents.

Meanwhile, the university executed a three-year master agreement with Io Consulting in November 2001 and continued to use Io Consulting under this master agreement. As of October 2002, Io Consulting had earned an additional $1.7 million under this master agreement at the chancellor's office alone, not including earnings from services performed and paid at the campuses. Additionally, as of June 2002, campuses paid Io Consulting more than $9.8 million for services, such as helping campuses implement the CMS software Io Consulting helped design and develop. Finally, when performing a limited review of the remaining 10 consultants that the chancellor's office paid more than $100,000 as of June 2002, we found four other consultants for which the chancellor's office used sole-source contracts. The amount paid to these four sole-source consultants totaled more than $1.3 million as of June 2002.

Not enforcing its own policy for sole-source contracts leaves the university vulnerable to criticism that it has not been equitable in selecting consultants.

At the Long Beach campus, one of three campuses we visited, we found additional problems with the sole-source procurement of consulting services. For example, after completing a limited comparison of Io Consulting against two other prequalified consultants that had master agreements, Long Beach decided to select Io Consulting. Io Consulting did not have a master agreement in place, so Long Beach applied to the chancellor's office for sole-source approval in August 2000. Although the director of contract services and procurement at the chancellor's office denied the sole-source request in September 2000, it allowed the $1.8 million contract to proceed anyway by defining Long Beach's limited comparison as a "competitive" process. However, because the selection process used by Long Beach was not open to all vendors, this award failed to meet the university's procurement policy for open competition to the maximum extent possible. When it does not enforce its own policy for sole-source contracts, the university leaves itself vulnerable to criticism that it has not been equitable in selecting consultants. Further, Long Beach amended this contract in December 2001 to extend the term from July 2001 to October 2001 and to increase the amount by $318,000 to cover some of the work Io Consulting performed after the contract expired in July 2001. Long Beach continued to procure Io Consulting services through Io Consulting's November 2001 master agreement.

Campuses Selected Consultants From University Master Agreements Without Ensuring That They Received the Best Value

When campuses using master agreements do not solicit offers from more than one consultant, they cannot demonstrate that they selected the best-value consultant.

Campuses also did not always ensure that they obtained the best-value consultants when selecting firms from the university's master agreements. The chancellor's office established groups of master agreements in 1999 in which seven consulting firms were selected, and again in 2001 when an additional 15 firms were selected. The chancellor's office evaluated and scored the consulting firms' qualifications and proposals, and selected those that met a minimum score. These master agreements facilitate the campus selection of prequalified consultants according to preestablished terms and conditions outlined in each master agreement. Although master agreements may have certain benefits, such as multiple campuses avoiding the time and labor costs to identify qualified consultants, prudent steps must be taken to ensure best value, considering both quality of the services and cost. According to the university's master contracts bulletin, the master agreements only provide ceiling labor rates and campuses may negotiate more favorable rates to reflect campus requirements. Therefore, unless they solicit offers from more than one prequalified consultant, campuses cannot be sure they obtained the best-value consultant to meet their needs. When campuses do not take additional steps to solicit offers from more than one consultant, they cannot demonstrate that they evaluated their options thoroughly and selected the best-value consultant.

Further, although the university is exempt from the State's requirements for using master agreements, the California Department of General Services encourages it to comply with the intent of its directives addressing master agreements that it began issuing in May 2002. These directives generally require state agencies to solicit at least three offers when using master agreements to procure information technology goods and services. The director of contract services and procurement states that the university does not believe the intent of this directive is relevant to its master agreements because it considers the agreements to be established through competition. However, establishing such a policy would be a prudent action and would be consistent with its guidance to campuses in February 2002. Although it did not make it a requirement, the chancellor's office recommended in its February 2002 master contracts bulletin that campuses enter into discussions about the scope of work and labor rates with a sufficient number of firms to determine the one that best fits their requirements.

The project director at one campus we visited acknowledged that generally no discussions took place with other prequalified consultants before selecting a consultant from the master agreement.

However, two campuses we visited that selected several consultants through master agreements did not always take these recommended steps to ensure that they obtained the best-value consulting firm. The Sonoma campus project director explained that he generally learned about consultants who were performing work on the project and simply hired them through the master agreements that the chancellor's office had put into place. However, the project director stated that for the student administration pilot project, the Sonoma campus participated with the chancellor's office and the Fresno campus in developing a request for consulting services, evaluating responses, and ultimately recommending the selection of Cedar (formerly the Hunter Group) as the project's implementation consulting partner. Similarly, the Fresno campus typically did not take additional steps to determine best value when selecting consultants that had master agreements in place. The campus project director acknowledged that generally no discussions took place with other prequalified consultants before hiring from the prequalified list of consultants with master agreements. For example, the project director told us that in one instance the campus simply selected a consultant because the campus project director had observed the consultant's work at the chancellor's office and said the consultant was qualified. When campuses do not take additional steps to solicit offers from more than one consultant, they cannot demonstrate that they thoroughly evaluated their options and selected the best-value consultant.

RECOMMENDATIONS

To ensure that it uses recommended practices in its future procurements, the university should do the following:

- Use the procurement process appropriate to the procurement objective. If the procurement objectives change during the process, it should restart the procurement using the appropriate process or formally modify the procurement process through appropriate written notification to potential vendors.

- Establish a practice of using quantitative scoring to demonstrate clearly that it followed an objective evaluation process to identify a best-value vendor. It also should document the resolution of evaluation team concerns to demonstrate it considered and appropriately addressed or mitigated these concerns.

- Enforce its policy that prohibits the use of sole-source contracts when multiple vendors or consultants are available to provide the goods or services.

- Establish a policy to require the solicitation of at least three offers for its prequalified vendor goods and consultant services master agreements. ■

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CHAPTER 5

Data Center Services Have Improved, but Data Warehousing Needs Remain

CHAPTER SUMMARY

Unlike its procurement of the Common Management System (CMS) software, the California State University (university) did use recommended procurement practices to select the outsourced data processing services needed to run CMS. The university conveyed its needs to potential vendors, asking them to propose solutions. The university also used an objective selection process with weighted criteria to evaluate potential vendors. Further, the university shared risk with the vendor by establishing contract terms aimed at holding the vendor accountable for meeting preestablished service levels. When it experienced inadequate service from the data center in the early months of the contract, the university used the procedures outlined in the contract to help raise the data center services to agreed levels. The service levels have improved in recent months. The vendor has achieved or come within one percentage point of achieving targets in the five months ending in November 2002.

Although the university worked to address its CMS data processing needs and is implementing more efficient means for reporting, it only now is starting to address campus CMS data storage and retrieval (data warehousing) needs. The outsourced data center processes CMS transactions, but is not designed for data warehousing. Data warehousing can provide for optimum data storage and reporting, such as enabling the production of reports that contain historical analysis of university operations. Largely because of concerns over CMS project resources, the university reportedly removed data warehousing from the CMS project scope early in the project and made this important component a campus responsibility. Now, with some campuses expressing an interest in data warehousing services, the university is addressing the data warehousing needs for a voluntary consortium of campuses.

THE DATA CENTER PROCUREMENT FOLLOWED RECOMMENDED PRACTICES

The university followed recommended procurement practices when it procured the data center services. It outlined its needs in its procurement's request for proposal (RFP), allowing vendors to propose solutions, and then used a methodical and weighted evaluation methodology to determine which vendor would provide the best value. Further, the contract includes terms aimed at holding the vendor accountable, so the vendor shares responsibility and risk with the university. Also, the contract is structured to help ensure that the vendor is held responsible for providing many important functions, such as data security, quality assurance, and internal control.

In February 2000, the university issued its request for qualifications for outsourced data center services.

During the initial planning, the university determined that the data center would be an outsourced endeavor. The university's primary roles were to ensure that the data center was planned, procured, and implemented appropriately and to work with the contractor to ensure that the services are provided according to the contract terms. The purpose of the data center procurement was to select a primary contractor for the CMS data processing operations that would provide the physical facilities, personnel, hardware, operating system software, network connectivity, and certain customer services. The university's procurement formally began in February 2000 when it issued a request for qualifications (RFQ) and culminated in a contract signing in March 2001, 13 months later. The contract, ultimately executed with Unisys for approximately $60 million, covers a five-year period for the Unisys data center in Salt Lake City, Utah.

The University Outlined Its Needs and Methodically Evaluated Vendors' Responses

The university followed recommended procurement practices by outlining its business problem and allowing vendors to propose solutions for services. For example, it allowed vendors to propose services at one location or multiple locations, and it encouraged them to propose additional services that could benefit overall operations. It used two solicitation documents—an RFQ in February 2000, followed by an RFP in April 2000. The university received four vendor responses in the RFQ process; it qualified two to move on to the RFP process. The procurement's RFP outlined the university's needs and allowed vendors to propose solutions. Also, the RFP's evaluation and selection criteria included noncost criteria such as technical competency, commitment and relationship, and service delivery and performance.

In reaching its procurement decision, the university sought to determine which solution provided the best value. In selecting a vendor, the university used a methodical and weighted evaluation methodology, separately weighting its evaluation criteria. For example, technical competency was assigned 29 percent of the possible points, service delivery and performance 14 percent, cost 29 percent, and so on. The university further detailed each criterion into factors that evaluation team members scored individually on a scale from 0 to 5. It used these team members' scores and the associated weights to calculate each vendor's score for each criterion. In August 2000, when the final scores were tallied, IBM emerged as the winning vendor.

The university ultimately terminated negotiations with IBM in December 2000 when they could not agree on final scope and cost issues. In Chapter 2, we discuss the costs the university incurred as a result of the failed IBM negotiations. Because campuses already were scheduled to begin implementing CMS in early 2001, and because Unisys was the only other bidder that participated in the RFP process, the university began negotiations and executed a contract with Unisys in March 2001.

The University Negotiated a Contract That Shares Risk With the Vendor

The Unisys data center contract has terms aimed at holding the vendor accountable for providing the contracted services, allowing the university to share the responsibility and risk for the data center with the vendor. The contract outlines a process the university can use to resolve disputes should concerns about vendor services develop. Also, the contract provides for the assessment of penalties should the vendor fail to meet specified service levels. For example, after a 180-day grace period from the beginning of data center services, contract provisions allow the university to assess penalties on an escalating scale depending on service levels. These penalties generally are not to exceed 5 percent of the monthly base charge for a given month, but they could escalate to 15 percent of the monthly base charge if there are consecutive months of failure to meet service levels. For example, if the first year's monthly base charge of $1.2 million was assessed a 5 percent penalty, the university would assess a $60,000 penalty on the vendor's subsequent monthly billing. The monthly base charges are reduced during subsequent years of the contract, reducing the five-percent penalty to $33,000 in the final year.

Contract provisions allow the university to assess penalties on an escalating scale should the vendor fail to meet specified service levels.

The university also structured the contract to help ensure that the vendor is held responsible for providing many important functions, such as data security, quality assurance, and internal control. According to the data center contract, the university pays the vendor the initial start-up fees up front for equipment being installed at the data center and for the services to get the project planned, the center put together, and the university staff trained. However, once the data center is operational, the university pays the vendor a fixed amount monthly for an agreed-upon level of service. The contract terms also hold the vendor responsible for ongoing operational efficiencies and require the vendor to assess the most effective and efficient practices, platforms, and software to provide the university. The contract says the vendor is to identify potential improvements through regular system analyses and perform periodic internal reviews to ensure quality. Thus, the university's contract helps ensure that the university can hold the vendor accountable for providing the services.

THE DATA CENTER HAS RAISED SERVICE LEVELS IN RECENT MONTHS

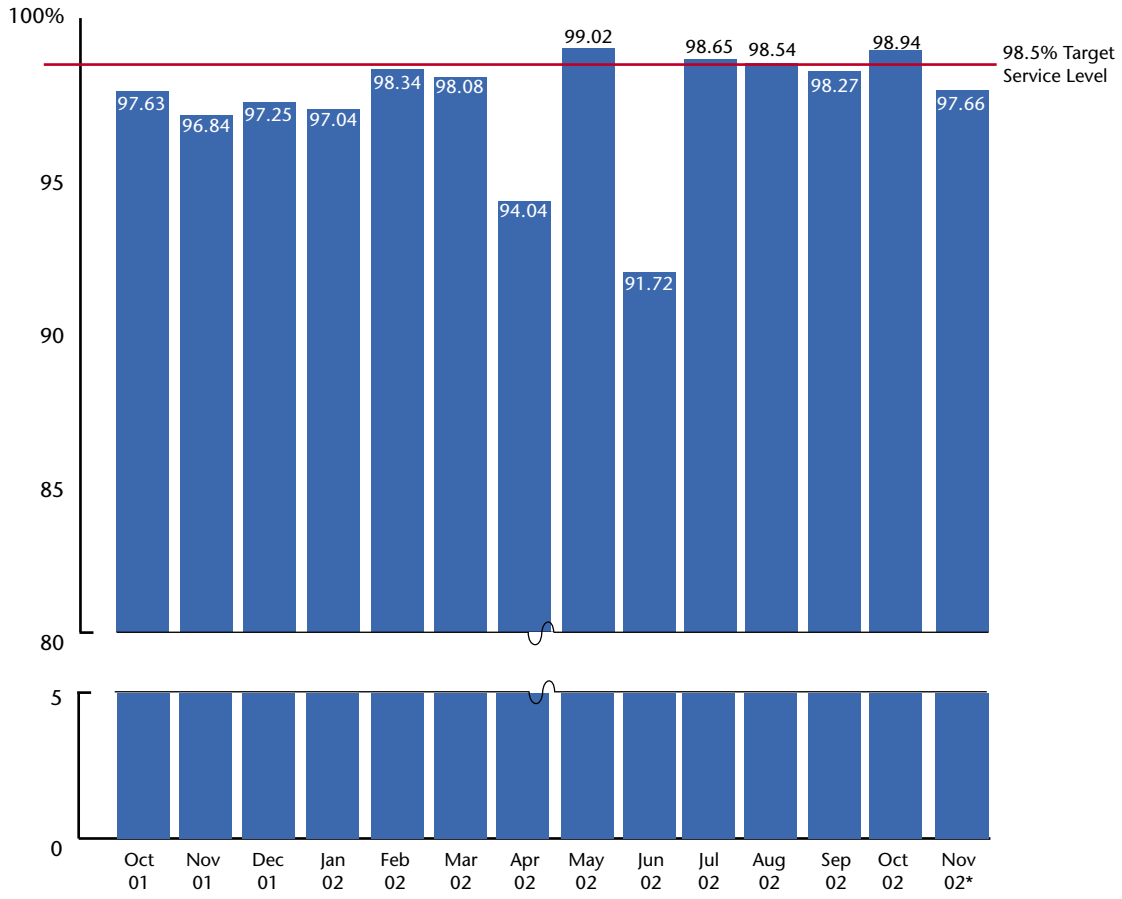
The university has not always received the level of service contractually required of the data center vendor.

Although it followed recommended procurement practices when procuring data center services, the university has not always received the level of service contractually required of the vendor. The university has worked with the data center vendor, and service has improved in recent months, as the data center has met required service levels or fallen just short of achieving them. The university receives service level data from the vendor and prepares monthly average data center service level reports, using these reports to assess penalties against the vendor for not meeting the service levels stipulated in the contract. The university and the vendor began tracking service levels in October 2001. Figure 8 presents the center's service level history for October 2001 through November 2002. This figure shows that, although the data center met the contracted service level only once during October 2001 through June 2002, more recent months show improvement. During July 2002 through November 2002, the data center met service levels three out of the five months.

The university's director of hardware operations and support services asserts that after the first four months of production, the university continued to experience many of the data center performance problems on a daily basis that it encountered early in the contract. In particular, according to the director,

FIGURE 8

Monthly Data Center Service Levels Have Improved Recently



Source: Monthly Unisys reports on service levels.

* According to the senior director for the CMS project, November 2002 service levels are preliminary as of January 2003, pending further review by Unisys and the university.

the university experienced problems caused by repeated vendor errors, which appeared to be operational errors that should have been simple to correct with adequate management. Some examples of these problems included computer outages and changes the vendor made without notifying campuses. Therefore, in November 2001, the director of hardware operations and support services informed the vendor that the university expected immediate and sustained improvements in upgrading campus services, improving computers and process schedulers, and monitoring production. Also, the university suggested better communication through daily reports and notification to campuses before performing maintenance on the computer system. Shortly thereafter, the university formally

When service levels were deficient, the university used the dispute resolution provisions in the contract and assessed penalties against the vendor.

escalated the ongoing performance issues with the data center vendor through the dispute resolution process outlined in the contract. First, the university requested in writing that the vendor act to resolve the problems, requiring the vendor to develop a quality assurance program. The next dispute resolution step was for the vendor to meet with the university in December 2001 for a status briefing. According to the university, the vendor agreed at the meeting to work with the university to provide timelines for improvements, including developing revised implementation plans and implementing a new-hire training plan that included providing refresher courses to current staff members as appropriate.

Service levels remained deficient, however, and the university used the provisions in the contract to assess penalties of $28,500 for substandard January 2002 data center services. It continued to assess penalties ranging from $4,800 to $58,500 for subsequent months when the data center did not meet service levels.

After these concerns over continuing data center issues, the university met with the vendor in March 2002, resulting in the vendor taking action to investigate the issues that month. The next month, the vendor replaced the service delivery manager and presented the university with a "Get Well Plan" that focused on areas for improvement. Shortly afterward in the same month, the university used the escalation procedures again because campuses could not install the software needed to schedule computer processing without the need for constant monitoring by campus staff. Partly in response to the university's continuing complaints, the vendor added an additional project manager in May 2002 and replaced key personnel, such as the data center director in June 2002 and the account executive in August 2002. In the most recent five months shown previously in Figure 8 (as of November 2002), the data center has achieved the targeted service levels for three months. It missed the targeted level by less than one percentage point for two months.

THE UNIVERSITY MUST ADDRESS NEEDS FOR CMS DATA WAREHOUSING

In addition to working to address its CMS data processing needs, the chancellor's office is implementing more efficient management reporting. However, it only now is starting to address campus CMS data warehousing needs. Data warehousing can provide for optimum data storage and reporting, such

as enabling the production of reports that contain historical analysis of university operations. Also, because the chancellor's office considers data warehousing a campus responsibility, it has not included the costs associated with CMS data warehousing as a central cost of the CMS project. Further, we noted that only a few campuses included CMS data warehousing costs in the June 2002 cost survey. Potential CMS data warehousing costs are unknown now, but they could be significant.

The university is implementing more efficient means for reporting CMS information. In December 2002, the director of business management systems told us that some campuses must use the CMS transactions databases and reporting tools at the data center to produce reports. Running reports from these databases can cause CMS transaction processing to slow down. The director added, however, that the data center is replicating the transactions databases to reporting databases, from which reports can be run instead. According to the director, as of December 2002, some campuses had their replicated databases, and the rest will be getting them. These reporting databases are included within the terms of the data center contract and are expected to eliminate the need to use the transactions databases for producing reports.

However, the university recognizes that separate data warehousing operations could be designed for optimum reporting, and the chancellor's office is starting to look into data warehousing options for some campuses. For example, data warehousing facilitates the cost-effective storage of data for very long periods of time. This data then can be used to conduct various business analyses, such as producing reports that reflect historical business trends that may not be possible or efficient without data warehousing. Additionally, data warehousing provides the potential to integrate CMS data with data from other systems to produce even more sophisticated analysis and management reports. Originally, the university recognized the need for data warehousing for CMS and included it within the project's scope, but in April 2002 the university added language to the project charter that removed this component from the scope. The senior director for the CMS project explained that the university eliminated data warehousing from the project scope early in the project and believes the university made it a campus responsibility largely because of concerns about CMS project resources.

Originally, the university recognized the need for data warehousing, but it eliminated data warehousing from the project scope early in the project.

The chancellor's office is looking into data warehousing solutions because some campuses that do not have their own data warehousing operations expressed an interest for these services to provide them with reporting options that are not being met by the CMS data center. Although the current university position is that campuses are responsible for CMS data warehousing, the chancellor's office is working, on a fee-for-service basis, with a voluntary consortium of campuses to address data warehousing needs. The director of business management services says the chancellor's office is working on a pilot project currently funded by the chancellor's office to design and develop a data warehousing model for campuses. Because campuses expressed an interest in these services, the chancellor's office is asking each of the eight campuses currently participating in the pilot project to explain the reasons each campus needs these services. By early 2003, the chancellor's office plans to estimate the fees to charge campuses that decide to use this model. The chancellor's office also expects to have released its final version of the data warehousing model in early 2003.

RECOMMENDATIONS

To ensure that it continues to receive improved service levels from the data center vendor, the university should continue to monitor the data center services and promptly take action to resolve problems with the vendor, including problems in meeting service levels or providing and maintaining appropriate and sufficient facilities, equipment, and staff throughout the life of the contract.

To ensure that it provides campuses with the means to effectively and efficiently store and retrieve data needed for useful management reporting, the university should expedite the CMS data warehousing project and include the CMS-related costs of campus data warehousing in its CMS project costs. ■

CHAPTER 6

The University's Oversight Over Potential Conflicts of Interest Needs Improvement

CHAPTER SUMMARY

In addition to its problems with procurements on the Common Management System (CMS) project discussed earlier in the report, the California State University (university) did not do enough to detect or prevent conflicts of interest by decision makers for CMS-related procurements. The university did not identify all necessary employee positions in its conflict-of-interest code as designated positions required to file annual statement of economic interests forms (Form 700s) and did not always retain and make available certain required filings of these forms. Additionally, the university did not require consultants on the project to file Form 700s, although they performed duties similar to employees in designated positions. Further, the university failed to provide for adequate disclosure processes to help ensure that individuals participating in the procurement process were free from conflicts. Also, the university did not provide appropriate guidance to employees to identify potential conflicts using the Fair Political Practices Commission (FPPC) process for determining conflicts. Finally, the university lacks a policy that spells out for employees what constitutes "incompatible activities," such as accepting anything of value from anyone seeking to do business with the university, and does not require that employees in designated positions receive regular ethics training.

Our review of CMS-related procurements found an employee who appeared to have a conflict of interest while participating in a procurement decision and an employee who possibly may have used nonpublic information to benefit personally. Conflicts of interest cast a shadow over the university's reputation for fair and honest business practices and undermine public confidence in the university's procurement decisions. Moreover, if an employee uses information not available to the general public for personal financial gain, it not only harms the university's reputation but also is unlawful.

THE UNIVERSITY'S PROCESS FOR PREVENTING AND DETECTING CONFLICTS OF INTEREST WAS LACKING IN SEVERAL AREAS

The university's conflict-of-interest code left out some university positions that should have been designated for filing annual Form 700s. The university fails to comply with state statutes by not maintaining its Form 700s adequately. It also hinders the public's ability to assess possible conflicts of interest by not providing copies of certain individuals' annual Form 700s.

Form 700s are used by certain state and local government officials and employees annually to publicly disclose their economic interests.

The FPPC provides annual Form 700s for certain state and local government officials and employees to publicly disclose certain personal assets and income as required by the Political Reform Act of 1974 (Political Reform Act), codified in the California Government Code, sections 81000 through 91015. The Political Reform Act also requires every government agency to adopt a conflict-of-interest code. The code must list each position within an agency that makes or participates in the making of governmental decisions that may foreseeably have a material financial effect, as defined by state regulations, on the economic interests of the person filling that position. Individuals employed in these positions are called "designated employees" or "code filers." Certain consultants to public agencies also qualify as "code filers" because they make or participate in making governmental decisions on the agency's behalf. Although the university maintains its conflict-of-interest code centrally, it maintains the filing of annual Form 700s separately at the chancellor's office and each campus.

The University Did Not Include Some CMS Management Positions in Its Conflict-of-Interest Code and Did Not Retain All Form 700s

The university did not include certain positions within its conflict-of-interest code, even though those positions required governmental decision making. These university employees are responsible for regularly overseeing and evaluating vendors and consultants. Therefore, filing annual Form 700s is important to ensure the disclosure of any potential conflicts of interest. The Political Reform Act requires the university to submit to the FPPC amendments to its code within 90 days after creating a new position that must be designated to file an annual Form 700. However, at the time of our review in summer 2002, the university had not submitted amendments for two chancellor's office management positions on the CMS project

and certain CMS project directors at the campus level, even though the 90-day time requirement had passed. In fact, the university created most of the positions in 1999 and 2000.

The associate director of human resource services for the chancellor's office told us that the office requested a Form 700 for one management position in March 2002 because it became apparent after the approval of the university's conflict-of-interest code that the position warranted being designated in the code. However, that employee did not submit the form by the due date of April 2002, and the university did not collect the form until six months later in October 2002. As a result of our inquiries, the chancellor's office requested forms from this and the other management employee whose position had not been designated and furnished them to us. Also, the chancellor's office added these positions to the amendments to its conflict-of-interest code that it submitted to the FPPC in October 2002.

Some campus CMS project directors with significant decision-making authority were not designated to file Form 700s.

Additionally, each campus is responsible for designating its own positions for the university's conflict-of-interest code. Campus CMS project directors are responsible for making or participating in making decisions that may foreseeably have a material financial effect on their economic interests and therefore should have been designated in the university's code. For example, the CMS project director's duties and responsibilities include developing implementation plans, managing the project budget, making recommendations regarding policies, negotiating with vendors, setting standards and service levels, setting priorities, and hiring and supervising staff. In addition, the salaries for these positions indicate significant decision-making authority: four campuses told us their CMS project director salaries ranged from $7,700 to $10,400 per month. Campus responses as to why the project director positions were not designated in the conflict-of-interest code ranged from saying they overlooked the position and would be sure to designate it in the future, to asserting that the position does not entail purchasing decisions so they do not plan to designate it. However, as stated earlier, project directors are clearly involved with making or participating in making decisions that may foreseeably have a material effect on their economic interests, including purchasing decisions.

Furthermore, the Political Reform Act requires the university to retain original filings of annual Form 700s for seven years, but the chancellor's office and campuses could not locate these forms in a number of cases. Of the 244 forms we requested for

various years on 63 university employees, the chancellor's office and campuses were unable to provide 39 forms because they could not locate them or because they failed to require certain individuals to complete them. In response to our initial request, the human resource services director for the chancellor's office stated that he found upon assuming the position in March 2000 that the records kept by previous chancellor's office personnel directors were not complete for the full seven-year period that they were required to be retained. In fact, many required forms for calendar year 1999 and previous years were unavailable at the chancellor's office until the filing officer was able to locate them more than four months after our initial request. Even after the chancellor's office later found these additional forms, some still could not be located. At the San Jose campus, the assistant to the associate vice president of human resources told us that staff could not locate any forms from 1995 to 2000. This individual stated that the staff member responsible for the annual statements during those years was no longer with the department, and the records were incomplete.

The university could not produce 39 of the 244 Form 700s that we requested.

The University Also Did Not Require CMS Consultants to File Form 700s

In addition to omitting the CMS managers and project directors, the university did not require consultants who participated on the CMS project to file Form 700s. For example, the university used consultants to help it evaluate responses on the CMS data center procurement. The university's director of contract services and procurement asserts that Form 700s were not required of these consultants because the university believes the consultants possessed no authority with respect to the award decision beyond providing information and advice to industry and technical expertise. The director of contract services and procurement stated that consultants are not required to file a Form 700 if the consultant prepares a product or performs services for a single specific matter versus performing ongoing services, or if there is significant intervening substantive review of the consultant's recommendations before submission to the final decision maker.

Although not all consultants are required to file Form 700s, the California Code of Regulations, Title 2, Section 18701, requires consultants who serve in a staff capacity with an agency, and in that capacity participate in making governmental decisions, to file Form 700s. According to these regulations, this participation includes advising or making recommendations

The university should have required consultants who served in a staff capacity to file Form 700s.

to the decision maker, either directly or without significant intervening substantive review, by methods that require the exercise of judgment and the purpose of which is to influence a governmental decision. The regulations list the following methods: conducting research; making any investigation; or preparing or presenting any report, analysis, or opinion either orally or in writing. Finally, consultants should file Form 700s if they perform the same or substantially the same duties that would otherwise be performed by individuals holding a designated position within the university's conflict-of-interest code.

One consultant from Aligne, a firm with which the university contracted, worked to provide management services for the data center procurement on an ongoing basis and appears to have participated in making governmental decisions without significant intervening substantive review, but was not required to file a Form 700. This consultant provided project management services for about nine months for this procurement effort. The consultant's duties and responsibilities included project management, reviewing and validating evaluation and selection criteria, participating as a member of the evaluation team, responding to vendor questions, developing the draft final evaluation report, and leading the negotiation team. Paid approximately $1,190 to $2,500 per day, the consultant's duties were similar to those of positions that are designated positions within the university's conflict-of-interest code.

In addition, the university hired the principal consultant from Io Consulting as a project manager in 1999 and did not require him to file a Form 700. The university's director of contract services and procurement stated that a Form 700 was not required because consultants from Io Consulting possessed no authority with respect to any award decision beyond providing information and advice related to industry and technical expertise. However, the principal consultant for this firm was given significant responsibility for the management of the project at that time. According to the contract, this consultant functioned as a project manager, assuming responsibility during part of the project for the management of all tasks necessary for the design, development, testing, and preparation of the human resources software. This consultant was responsible for managing and directing contract and university staff and had the duty of communicating and presenting the project's status to relevant parties and groups, such as the senior director for the CMS project and the steering committee. Chapter 4 discusses the selection and the role of the Io Consulting firm in the CMS project.

Its Procurement Disclosure Forms Are Inadequate, and the University Could Not Provide These Forms for Many of the CMS Software Procurement Participants

In addition to mishandling annual Form 700s, the university could not provide signed disclosure forms for many participants in the CMS software procurement. Individuals signing disclosure forms are certifying that they have no personal or financial interests incompatible with their participation in the procurement process. Moreover, these disclosure forms are themselves inadequate to allow participants to assess their potential conflicts of interest. Thus, the university could not demonstrate that all participants had assessed adequately whether their personal interests were compatible with the procurement process and that these participants had been reminded of their duty to keep aspects of the procurement process confidential. By not ensuring that procurement participants sign adequate disclosure forms, the university leaves itself open to criticism that bidders did not get equal treatment and their information was not kept confidential.

By not ensuring that procurement participants sign adequate conflict-of-interest disclosure forms, the university leaves itself open to criticism.

Disclosure forms the university used for the procurements we reviewed did not provide an effective conflict-of-interest disclosure process for individuals participating in the procurements. Although the university is not required by policy or statute to require such forms, its policy manual for contracting and procurement requires it to have procedures in place to ensure fairness and uniform treatment to all bidders and ensure that confidentiality of certain information received from bidders is maintained. Therefore, the university's practice is to require individuals, before they participate in confidential procurement activities, to sign these forms, which address two main areas: conflicts of interest and confidentiality. Individuals signing the forms are certifying that they have no personal or financial interest incompatible with their participation in the procurement process, and that they will hold in strictest confidence certain information regarding vendors' responses to the procurement. However, the disclosure forms we were able to review for selected procurements for the CMS project did not clearly indicate what constitutes a conflict of interest or even list potential bidders so procurement participants could assess their potential for conflicts of interest. Further, the university could not provide signed disclosure forms for 30 of the 94 individuals whom we were able to identify as participating in one or more phases of the CMS software procurement process. Therefore, the university could not demonstrate that all participants signed these forms.

The University Has No Employee Policy on Incompatible Activities and No Requirement That Employees Receive Regular Ethics Training

Without a published incompatible activities policy, university employees do not have a basis to reasonably know what is considered an incompatible activity.

Further, the university lacks a policy that formally communicates incompatible activities to employees and lacks a requirement for ethics training. Two examples of incompatible activities include employees using confidential information for private gain or advantage, or accepting anything of value from anyone seeking to do business with the university. When the university does not take prudent steps to inform employees of incompatible activities through widely published policy and ethics training, it leaves itself vulnerable to inappropriate employee actions. Although the university may make some efforts to communicate incompatible activities, without a published policy that communicates these statutory and constitutional requirements, university employees do not have a basis to reasonably know what is considered an incompatible activity.

The deputy general counsel told us the university does not have an incompatible activities policy, similar to that addressed in Government Code, Section 19990, for state employees, because statutes and the state constitution spell out the incompatible activities, and current statutes no longer require the university to have such a policy. The university explained that it takes other steps to ensure that employees know their responsibilities. The assistant vice chancellor for human resources administration asserts that through orientation, supervision, and training the university advises employees that they are expected to maintain high professional standards in meeting their assigned responsibilities and that they are not to engage in activities that are incompatible with their university responsibilities. Further, the university believes its efforts to coordinate and communicate its conflict-of-interest code address incompatible activities issues. Finally, the assistant vice chancellor asserts that negotiating one incompatible activities policy would be difficult, if not impossible, because the university believes it would have to negotiate such a policy for the 10 different collective bargaining agreements that cover the majority of its employees. However, if the university had a policy for activities that are addressed by statute or the state constitution, we question how they would be negotiable issues during the collective bargaining process.

The university also does not require its employees to receive ethics training regularly. Although Government Code, sections 11146 through 11146.4, require certain state officials to complete an ethics training course every two years, the

The university asserts it is exempt from state requirements that employees receive ethics training on a regular basis.

university's deputy general counsel asserts the university is exempt from this requirement. The deputy general counsel cites the California Education Code, Section 66606.2, which states the Legislature intends that the university not be governed by any statute enacted after January 1, 1997, that does not amend a previously applicable act, unless the statute expressly provides that the university is to be governed by that statute. The biennial ethics training requirement was part of a 1998 statute that did not specifically include the university. Nevertheless, recently enacted state law, Chapter 663, Statutes of 2002, which became effective January 1, 2003, demonstrates the Legislature's commitment to ethics training by expanding these training requirements to include all employees of a state agency who are required to file statements of economic interest pursuant to the Political Reform Act. The deputy general counsel asserts that the university is exempt from this requirement as well. However, it would be prudent for the university to hold such training regardless of whether it is required by statute.

Although some university training for employees may address "ethics," the university could not demonstrate that it provided a focused ethics training process. When we asked the associate director for human resource services for the chancellor's office about its practices to provide ethics training, she responded that the university offers several training modules that incorporate elements of "ethics," such as dealing with conflict and violence in the workplace, sexual harassment prevention, and training for managers in employment practices. In addition, the director of contract services and procurement said that, although her department does not specifically provide ethics classes for its employees, ethics and public stewardship concepts are covered in certain sections of the training they do receive. Although the university may provide training that touches upon aspects of ethics, it does not provide employees with training that is focused on ethics such as that addressed in Government Code, sections 11146.1 through 11146.4.

When the university is lax in its conflict-of-interest policies and practices, actual or seeming conflicts of interest may cast doubt over its procurement decisions. Also, it leaves itself vulnerable to improper employee actions when it does not take prudent steps to inform employees of incompatible activities through widely published policy and ethics training. In the following section, we discuss where our review of Form 700s indicated that an apparent conflict of interest existed with a university employee

who participated in a CMS procurement. We also discuss where an employee possibly may have used nonpublic information in an attempt to benefit personally.

FORM 700s INDICATE A UNIVERSITY EMPLOYEE HAD AN APPARENT CONFLICT OF INTEREST AND ANOTHER MAY HAVE TRIED TO BENEFIT PERSONALLY FROM NONPUBLIC INFORMATION

Our review found a university employee who participated in a CMS procurement whose Form 700s indicate an apparent conflict of interest, receiving income from a firm competing for and ultimately awarded a contract. Another university employee may have used information not available to the general public with the possible intent to benefit financially. The Political Reform Act generally holds individuals who violate the act liable rather than their employers. Nonetheless, with better practices in place, the university would have been better positioned to detect and perhaps avert the kinds of apparent conflicts identified. Conflicts of interest undermine public confidence in the university's procurement decisions, opening the door for criticism of improper behavior and tarnishing the university's reputation for fair and honest business practices.

FPPC's Eight-Step Analysis to Determine Whether an Individual Has a Disqualifying Conflict of Interest Under the Political Reform Act

1. Determine whether the individual is a public official.
2. Determine whether the official is participating in or attempting to influence a governmental decision.
3. Identify the public official's economic interests.
4. For each economic interest, determine whether that interest is directly or indirectly involved in the governmental decision.
5. Determine if the effect is material.
6. Determine if the effect is reasonably foreseeable.
7. Determine if the effect is distinguishable from the effect on the public generally.
8. Determine if the official's participation is legally required.

Determining what constitutes a conflict of interest and is therefore a violation of the Political Reform Act is generally the purview of the FPPC. The California Code of Regulations, Title 2, Section 18700, provides a basic rule for what constitutes a conflict of interest under the Political Reform Act and outlines an eight-step analysis (see textbox) that the FPPC uses to determine if a conflict of interest exists. The basic rule states that public officials may not make, participate in making, or use or attempt to use their position to influence a governmental decision in which they know, or have reason to know, that the decision will have a reasonably foreseeable material financial effect on their economic interests. Public officials include employees and consultants of the university. Economic interests are defined with certain thresholds. For example, an economic interest in a business entity exists if an investment is $2,000 or more; an economic interest exists regarding a source of income if it totals $500 or

more within the 12 months before the governmental decision. If a conflict exists, public officials must disqualify themselves from participation in the decision.

It would be prudent for the university to have a process in place to resolve potential conflicts.

According to state regulations, the university's responsibility for reviewing potential conflicts disclosed on Form 700s includes conducting what the FPPC calls a "facial" review of each statement and conducting a full review of at least 20 percent of the statements. Facial reviews include verifying that the forms are complete. A full review includes additional steps such as reviewing attached schedules for required descriptive information and checking for consistency between schedules. Although state regulations do not require the university to use the FPPC's eight-step process for testing potential conflicts, the university would be prudent to have a process to resolve identified potential conflicts. For example, the attorney general publishes guidance for government officials in complying with conflict-of-interest requirements. That guidance recommends that employees use the eight-step process and seek advice from in-house counsel when the potential for a conflict is recognized. Thus, the university should provide employees guidance on using the eight-step process and their need to seek the advice of counsel.

A University Senior Executive Who Participated in the CMS Software Procurement Received Income From the Selected Vendor

Although we recognize that the FPPC is the determining entity, our review of Form 700s identified financial interests that appeared to create a conflict of interest. A university senior executive participated in the CMS software procurement process although he reported on his Form 700 that he received income from the vendor the university selected. The CMS software procurement took place between April 1997 and September 1998; this senior executive received income from the bidder for facilitating meetings periodically from 1996 through 1998. For 1996, the senior executive reported more than $10,000 of consulting fees and between $1,001 and $10,000 in travel reimbursements from this vendor, and between $1,001 and $10,000 for meeting facilitation for both 1997 and 1998 in addition to travel payments of $4,400 for 1997 and $2,900 for 1998. The software procurement ultimately resulted in a $33 million software licensing, consulting, and training contract with the vendor, ultimately $37 million after amendments, and a subsequent agreement for additional consulting services that, as of June 2002, was expected to total $12 million.

The senior executive asserted that his role in the CMS procurement process did not include the selection of the vendor because he absented himself from every meeting in which decisions were made about the vendor or its competitors, including the final meeting during which the vendor was recommended. Although the senior executive may not have participated in this final meeting, we did find that he participated in key activities related to the vendor's selection. For example, the senior executive participated in site visits to evaluate the quality of the potential vendors' products and services and was on the final contract negotiations team.

The senior executive's assertion that he had a minimal role in the procurement does not reconcile with his significant responsibility.

The senior executive asserts that his role in the site visits was as an observer, note taker, and staff support person, just as on all the integrated technology strategy initiatives and projects. However, this minimization of his role to clerical or analyst support does not reconcile with the senior executive's significant responsibility for leading and managing complex multicampus information technology projects. As evidenced by the more than $11,000 per month compensation received during the period of the CMS software procurement, the senior executive presumably was being paid to make or participate in making decisions affecting the Integrated Technology Strategy plan and its CMS component. A description of the role and scope of the senior executive's responsibilities during that time indicates he was responsible for managing and executing information resources and technology projects, fostering and brokering partnerships and alliances within the university and with external public and private organizations, and representing the university with various external organizations relative to the university's integrated technology strategy.

Although he did not perform similar services for any other vendor competing for the university's CMS software business, the senior executive states that his supervisor at the time encouraged him to accept the vendor's invitation in late 1995 because of his proven skills as a facilitator and because the position was another "positive" to the university's growing national reputation as a leading institution. The senior executive's agreement to facilitate the vendor's higher education meetings may have added some value to the university; nevertheless, once the senior executive recognized the vendor had a serious interest in conducting business with the university, he was obligated to determine whether he had a potential conflict of interest before participating in any phase of the CMS software procurement process. The senior executive could have

determined whether a potential conflict existed had he used the FPPC eight-step process, sought advice from university counsel, or contacted the FPPC for a determination.

While reviewing the 1998 Form 700s subsequent to the CMS software procurement, the former director of human resources for the chancellor's office became aware of the potential for a conflict of interest and questioned the senior executive. However, the former director did not use the FPPC eight-step process and did not refer the individual to university counsel to establish whether a conflict of interest existed. As discussed previously, the university is not required to use the eight-step process. However, we used the eight-step process and found that a conflict of interest appeared to exist because the senior executive received, within 12 months before the senior executive's participation in the procurement, more than $500 in income from a vendor competing for the university's CMS software contract.

A University Senior Executive May Have Tried to Use Nonpublic Information for Financial Benefit

A university senior executive reportedly purchased between $10,001 to $100,000 of a computer company's stock one day before the university signed a major contract with that company.

Finally, even though another senior executive apparently was not involved directly in the procurement process, this individual may have used nonpublic information regarding the university's contracting for personal computers to try to benefit personally. Using nonpublic information in this manner would be a violation of university policy and Education Code, Section 89006, which prohibits employees from using nonpublic information to benefit personally. The senior executive reportedly purchased stock in a company one day before the university executed the contract with that company. According to the individual's Form 700, the senior executive purchased between $10,001 and $100,000 of the stock on February 24, 1999, in a company to which the university awarded a major contract for computer products and services the following day. This contract was a master agreement for the chancellor's office and campuses to order computers and servers. Although the master agreement did not specify a total amount to be spent, the university's request for proposal addressed the potential significance of the agreement by noting that the university operated at the time approximately 30,000 laptop computers, desktop computers, and servers with an estimated useful life of three years.

The senior executive asserts that her spouse purchased the stock, and that she cannot recall whether she knew the university even had a process under way to establish systemwide agreements with computer vendors, much less to award an agreement to the vendor in question. Although the senior executive cannot recall, meeting minutes indicate that the senior executive attended a mid-February 1999 meeting where the "signing" of a contract to acquire computer hardware at "very attractive prices" was discussed. Although the discussion was of a vendor that ultimately did not receive the contract, as we discuss further below, the senior executive was in a position to reasonably be aware that the university was involved in a procurement to establish systemwide agreements with computer vendors. Further, the senior executive has a high-ranking management position whose responsibilities included overseeing information technology services that support the chancellor's office. Thus, we find it at least questionable that the senior executive was unaware of the university's final decision to enter into the contract.

The university advised the senior executive to refrain from participating in future decisions regarding this company; yet the possible use of nonpublic information was not discussed.

Interestingly, the public was most likely not apprised of the impending contract because the university's notification of intent to award regarding this procurement indicated a different vendor. The company that was ultimately awarded this contract was a secondary finalist, so it was not mentioned on the university's notice of intent to award. Pending negotiation of a final agreement, the university issued a notification of intent to award on December 14, 1998, to the initial winning bidder. Subsequently, the university awarded the contract to this secondary finalist on February 25, 1999, one day after the senior executive (or spouse) had reportedly purchased between $10,001 and $100,000 of the second finalist's stock.

University documentation indicates that the human resources director at the time met with the individual in June 1999 to discuss the stock holdings identified on the individual's Form 700. The documentation shows the former human resources director advised the senior executive to refrain from participating in any future decisions regarding this vendor, including making recommendations. However, the documentation failed to address the senior executive's possible use of information not available to the public to benefit personally. The individual who was the human resources director at the time told us that he was not aware of the stock purchase timing until we brought it to his attention.

Apparent conflicts and incompatible activities such as these undermine confidence in the university's procurement decisions, leaving the university vulnerable to allegations of improper decisions. Also, if an employee uses information not available to the general public for personal financial gain, it is not only unlawful, but it also may harm the university's reputation for fair and honest business practices.

RECOMMENDATIONS

The Legislature should consider the following to ensure that the university takes appropriate action to prevent potential conflicts of interest in the future:

- Require the university to provide designated university employees with periodic ethics training similar to that required for designated state employees by Government Code, sections 11146 through 11146.4.

- Require the university to establish an incompatible activities policy for university employees similar to that addressed in Government Code, Section 19990, for state employees.

To ensure that it adequately addresses potential conflicts of interest and prohibited use of nonpublic information, the university should:

- Conduct periodic conflict-of-interest training, such as the ethics training required of state agencies, for designated employees to inform those in decision-making positions about required disqualification when potential conflicts of interest exist. This training should provide employees guidance on using the FPPC's eight-step process as well as their responsibility to seek the advice of counsel.

- Establish an incompatible activities policy that it formally communicates to employees.

- Require all employees to sign disclosure statements before participating in the procurement process.

- Enhance its disclosure form to indicate clearly what constitutes a conflict of interest, list all vendors participating in the procurement as they are known, and state that evaluators are prohibited from using nonpublic information to benefit personally.

- Update its conflict-of-interest code to classify all positions responsible for evaluating or overseeing vendors or contractors.
- Require consultants that serve in a staff capacity and that participate or influence university decisions to file Form 700s.
- Remind human resources personnel of their responsibility to collect, retain, and make available the filed Form 700s for the required seven-year period.
- Remind employees of the prohibition against using information not available to the public to benefit financially, and discipline infractions if necessary.

We conducted this review under the authority vested in the California State Auditor by Section 8543 et seq. of the California Government Code and according to generally accepted government auditing standards. We limited our review to those areas specified in the audit scope section of this report.

Respectfully submitted,

ELAINE M. HOWLE
State Auditor

Date: March 11, 2003

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APPENDIX A

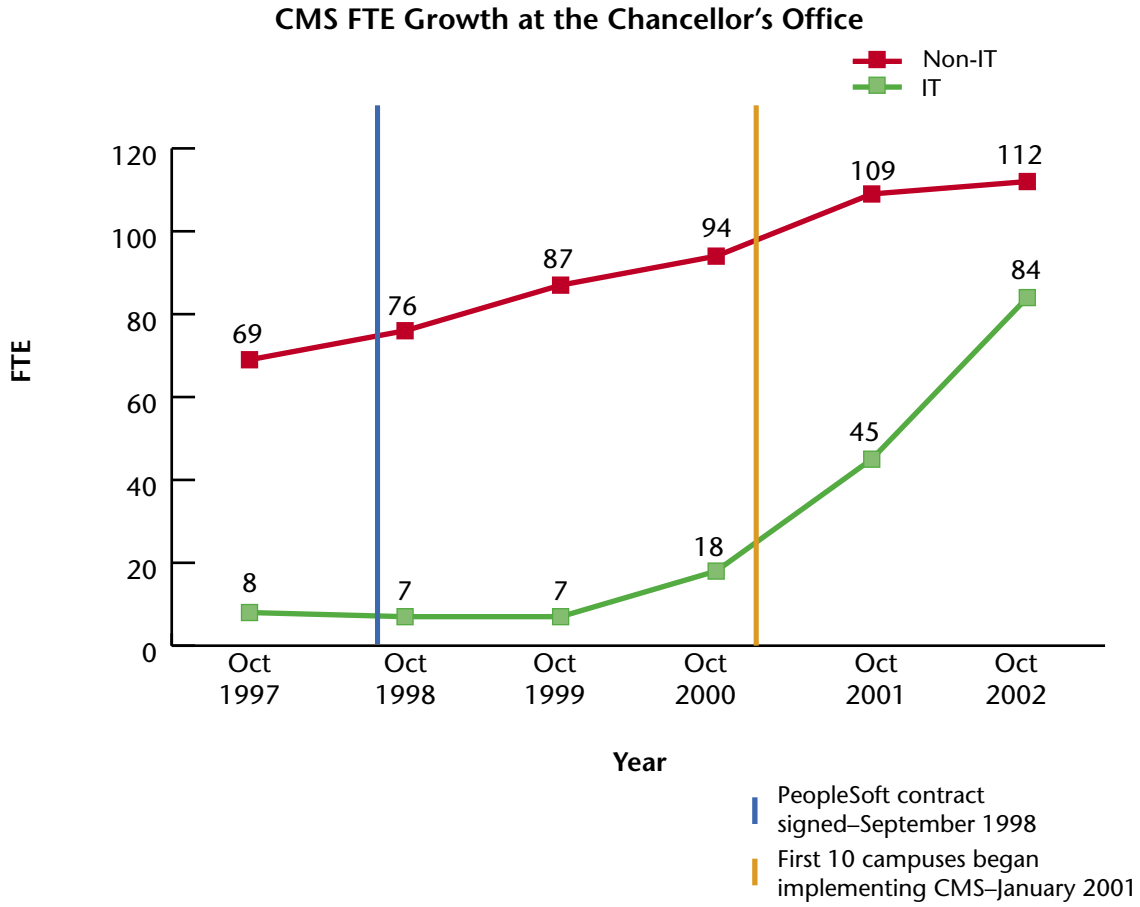
Chancellor's Office Positions and Workload Will Increase, but It Is Too Early to Determine the Impact of Project Implementation on Campus Positions and Workload

The California State University's (university) approach to implementing the Common Management System (CMS) depends heavily on consultants during the project's initial stages. However, the university plans to replace most of these consultants with its own employees once they are trained adequately on CMS operations. As of December 2002, the university was still in the early stages of CMS implementation, with CMS being used at five campuses, 14 implementing the software, and four yet to begin the implementation process. As a result, it is too early to judge the impact of CMS implementation on the number of employee positions on the campuses. Nevertheless, employee full-time-equivalent (FTE) data obtained during the audit suggests the chancellor's office will experience a permanent increase in FTEs. The 11 "first wave" campuses to implement the new software also have experienced some FTE growth attributable to CMS. Given that the CMS project is still incomplete, it remains unclear whether the campus FTE increases represent permanent positions. Finally, it is too early to assess CMS's impact on employee workload, given the current status of this project and the university's lack of preestablished targets for its post-CMS information technology (IT) and non-IT staffing. As discussed in Chapter 1, the university did not establish quantitative measures of business process efficiencies. As a result, it has not attempted to monitor changes in employee workload attributable to CMS.

The Chancellor's Office Likely Will Have Permanent Increases in Employee Positions Related to CMS

The Bureau of State Audits (bureau) surveyed the chancellor's office to obtain FTE totals (from 1997 through 2002) for IT and non-IT designated employees.

FIGURE A.1



Source: The university's June 2002 cost survey.

Note: The FTE data presented above are based only on work functions that may include individuals working on the CMS project. These include human resources, finance, student administration, and general CMS work functions only.

As Figure A.1 demonstrates, the chancellor's office has realized FTE growth in CMS-related functions in both IT and non-IT designated positions. Between October 1997 and 2002, 119 FTE positions were added at the chancellor's office in CMS-related functions—76 in IT positions such as functional analysts and 43 FTEs in non-IT positions such as managers and administrators. Between October 1997 and October 2002, total chancellor's office FTE increased by 138 positions. Of this total increase, 119 related to finance, human resources, student administration, and general CMS functions. This latter category accounted for 98 positions. According to its June 2002 cost survey, the chancellor's office expects to spend $14 million on personnel for maintaining CMS during fiscal year 2006–07, the final year of implementation. According to the chief of staff for information technology services, this $14 million relates to 110 employees expected to be working on CMS that year.

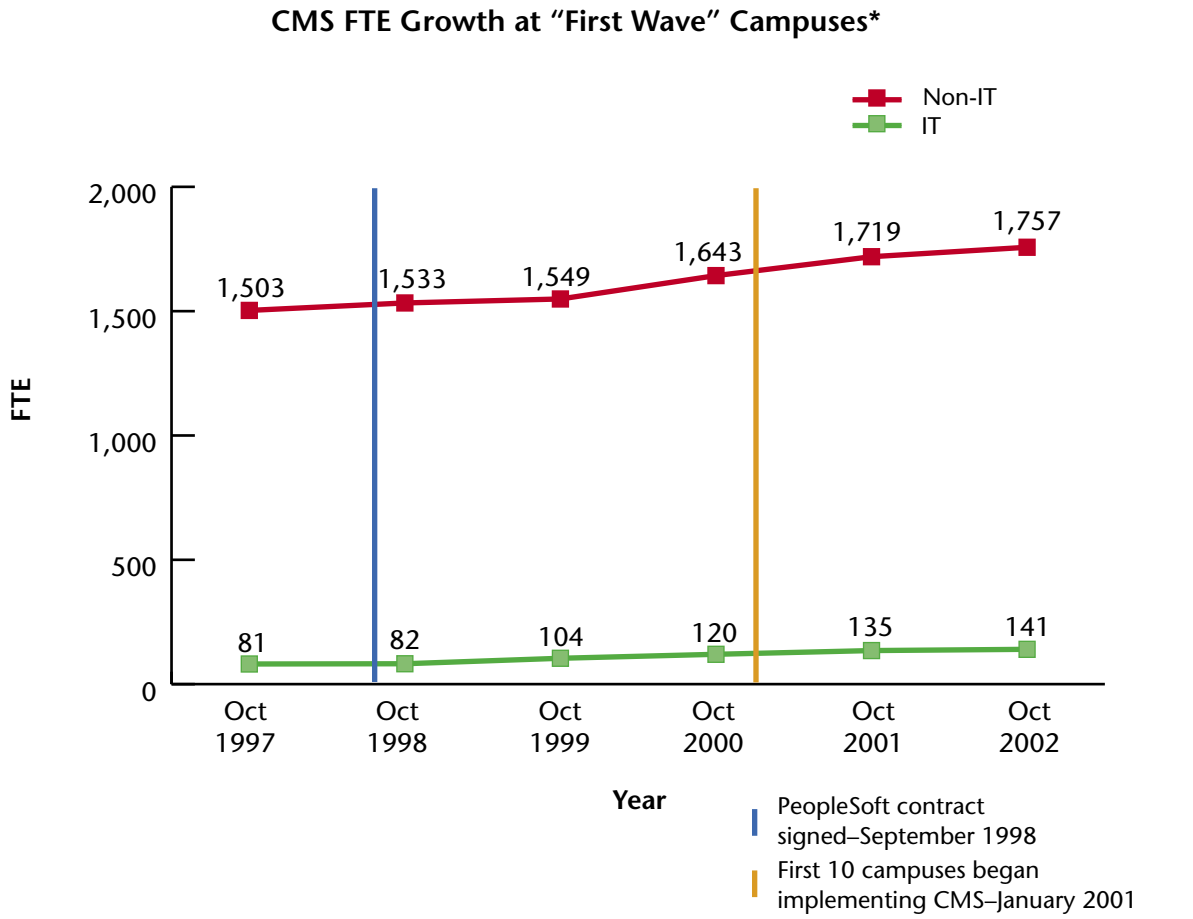
As Figure A.1 demonstrates, FTE growth at the chancellor's office has been the most pronounced in IT designated positions, especially beginning in October 2000, a few months before campuses started implementing the software. IT personnel hired during this time included CMS function analysts, technical analysts, and help desk personnel. The significant growth in IT designated positions at the chancellor's office around October 2000 seems consistent with its support of campus CMS implementation. In their role under CMS, chancellor's office personnel are responsible for the acquisition, development, and final distribution of the CMS software to the campuses. The CMS software request for qualifications was issued in April 1997, and the software was procured in September 1998. Since early 1999, the chancellor's office has been modifying the software so it will meet the campuses' collective needs more closely. Today, as more campuses begin the implementation process, chancellor's office staff continue to work on the CMS software. Non-IT personnel hired at the chancellor's office between October 1997 and 2002 were placed in various administrative and managerial positions that support the CMS project.

The FTE data provided in Figure A.1 relates only to employee positions likely to be affected by CMS, namely finance, human resources, student administration, and general CMS positions. Although our survey obtained FTE data for other positions, such as data center and managerial staff, the survey's instructions directed the chancellor's office to report all CMS-related FTE information in the work categories used in Figure A.1.

It Is Too Early to Assess CMS's Impact on Employee Positions at Campuses

Given that the CMS implementation effort is still in its early stages, assessing the impact of this new software program on employee positions is likely premature. Also, the permanency of any new positions is unclear given that the project is still incomplete. Nevertheless, to respond to the Joint Legislative Audit Committee's request for this assessment, the bureau surveyed all 23 campuses to obtain FTE totals for IT and non-IT designated employees. The FTE data obtained through the survey was provided as of October of each year, covering 1997 through 2002. The results of the FTE survey for the 11 "first wave" campuses to implement CMS suggests these campuses have increased their IT and non-IT FTEs because of the CMS project.

FIGURE A.2



Source: The university's June 2002 cost survey.

Note: The FTE data presented above are based only on work functions that may include individuals working on the CMS project. These include human resources, finance, student administration, and general CMS work functions only.

* First 11 campuses implementing CMS.

The FTE totals presented in Figure A.2 represent IT and non-IT designated positions only in work classifications likely to be affected by CMS during the period, namely in human resources, finance, student administration, and general CMS positions.

As Figure A.2 demonstrates, non-IT designated employees increased by 254 FTEs, or about 17 percent between October 1997 and 2002. During this same period, IT designated employees also increased by 60 FTEs, or about 74 percent. It appears that most of these FTE increases can be attributed to CMS. For selected FTE increases during this period, we asked the first wave campuses of Sonoma, Fresno, and Long Beach to explain selected FTE increases and indicate whether those increases were due to CMS. Of the 78 FTE increases that we

asked these campuses to explain, 33 were attributed to the CMS project, with 21 in IT designated positions and 12 in non-IT positions such as managers and administrators. In instances in which campuses reported FTE increases unrelated to CMS, they cited needs for increased support at financial aid offices, student records, and enrollment services as the reasons for hiring more personnel. These campuses also reported adding some IT-designated employees as telecommunications and network analysts for reasons unrelated to the CMS project.

The University Does Not Track Changes in Employee Workload Attributable to CMS

As discussed in Chapter 1, the university has elected to measure CMS's benefits qualitatively by surveying university employees about their level of satisfaction with the new software. Although the university hopes to achieve improved employee efficiency through CMS, it has not developed a means to monitor or record changes in employee workload attributable to the project. During our audit we asked the chancellor's office and the three campuses we visited about their efforts to monitor and track employee workload changes attributable to CMS. The Long Beach campus did not respond to our question, and the chancellor's office and the Sonoma campus indicated they do not track employee workload. The Fresno campus said it was too early to assess employee workload; however, it plans to measure workload in fiscal year 2002–03 when the effects of implementation subside.

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APPENDIX B

Projected Total Investment and Maintenance and Operations Costs of the Common Management System Project by the Chancellor's Office and Campuses

Table B.1 on the following page shows two broad cost areas—the projected total investment costs and maintenance and operations costs—for the chancellor's office central costs and each campus. The source of the cost data is the California State University's (university) June 2002 cost survey. First, the table shows the total one-time investment costs of the Common Management System (CMS) project covering the nine-year project period. This includes the costs for the project areas of implementation, integration, in-kind, and upgrades as discussed in Chapter 2. Next, the table shows the maintenance and operations costs, or the total of the recurring costs of the CMS project during the nine-year period. As discussed further in Chapter 2, the amount of maintenance and operations costs a campus reflects is influenced by how far along campuses are in the implementation process.

TABLE B.1

Projected Total Central Costs and Campus Costs for Fiscal Years 1998–99 Through 2006–07

	Projected Total Investment Costs	Projected Total Maintenance and Operations Costs	Projected Total Costs
Central*	$ 83,855,717	$152,560,212	$236,415,929
Campus			
Bakersfield	6,611,545	1,852,256	8,463,801
Chancellor's Office†	3,321,300	3,391,935	6,713,235
Channel Islands	514,880	346,787	861,667
Chico	14,815,073	3,631,067	18,446,140
Dominguez Hills	9,710,000	4,119,800	13,829,800
Fresno	10,656,526	7,725,600	18,382,126
Fullerton	17,978,070	1,345,563	19,323,633
Hayward	12,303,668	6,191,958	18,495,626
Humboldt	9,235,829	2,407,035	11,642,864
Long Beach	25,448,554	11,659,574	37,108,128
Los Angeles	8,769,400	4,651,100	13,420,500
Maritime Academy	1,303,614	3,334,571	4,638,185
Monterey Bay	11,984,613	3,399,024	15,383,637
Northridge	13,717,868	4,500,961	18,218,829
Pomona	16,154,608	4,082,831	20,237,439
Sacramento	16,469,300	2,803,200	19,272,500
San Bernardino	14,869,265	5,039,719	19,908,984
San Diego	34,661,458	2,934,900	37,596,358
San Francisco	21,844,500	11,437,500	33,282,000
San Jose	8,419,218	7,044,984	15,464,202
San Luis Obispo	26,622,700	7,029,374	33,652,074
San Marcos	7,733,700	3,088,600	10,822,300
Sonoma	8,567,704	12,217,710	20,785,414
Stanislaus	7,038,450	2,478,097	9,516,547
Campus Costs	308,751,843	116,714,146	425,465,989
Total CMS Costs	**$392,607,560**	**$269,274,358**	**$661,881,918**

Source: The university's June 2002 cost survey.

* Central costs are the centralized costs for the development, implementation support, and operation of CMS systemwide.

† Chancellor's office "campus" costs represent the cost of implementing human resources and finance applications at the chancellor's office.

APPENDIX C

Projected Total Costs of the Common Management System Project by Type of Costs

The projected total costs of the Common Management System (CMS) project as of June 2002, $662 million for fiscal years 1998–99 through 2006–07, are shown in both of these tables. These costs reflect the one-time investment costs and the recurring maintenance and operations costs. Table C.1 on the following page presents the systemwide costs in the areas of personnel, training, travel, consultants, hardware, software, and other costs by fiscal year. This table shows that costs are expected to climb until they reach $111 million in fiscal year 2004–05, when they start to decline. It is noteworthy that of the almost $85 million listed as the total for fiscal year 2006–07, more than $65 million represents the operations and maintenance costs that recur annually. Table C.2 provides a further breakdown of the same cost areas by campus. As shown in the table, campuses differ significantly in the amount and nature of the costs they are incurring. The source of the cost data is the university's June 2002 cost survey.

TABLE C.1

Summary of Actual and Projected Common Management System Systemwide Costs by Year From Fiscal Years 1998–99 Through 2006–07

Types of Costs	Actual 1998–99	Actual 1999–2000	Actual 2000–01	Actual 2001–02	Projected 2002–03	Projected 2003–04	Projected 2004–05	Projected 2005–06	Projected 2006–07	Projected Total Costs
Personnel	$ 606,092	$ 3,551,457	$13,164,359	$25,257,557	$39,474,266	$44,687,388	$ 54,324,844	$ 60,201,142	$55,365,310	$296,632,415
Training	712,375	623,684	1,212,306	2,728,382	3,348,674	3,479,362	3,358,458	2,742,716	1,238,778	19,444,735
Travel	155,852	714,751	692,635	734,364	1,487,243	1,511,009	2,495,701	2,354,722	1,061,590	11,207,867
Consultants	801,769	8,258,435	21,654,163	25,145,293	21,592,323	22,664,619	32,308,037	25,628,121	8,632,758	166,685,518
Hardware	293,511	227,533	9,068,302	17,172,445	15,503,303	12,466,757	10,783,791	10,098,288	9,954,589	85,568,519
Software	4,077,028	5,822,412	16,167,269	12,307,951	7,086,147	5,353,440	5,710,823	4,765,074	6,826,546	68,116,690
Other	181,506	478,040	1,278,204	2,443,468	2,530,898	1,977,672	1,765,354	1,892,866	1,678,166	14,226,174
Total Costs	**$6,828,133**	**$19,676,312**	**$63,237,238**	**$85,789,460**	**$91,022,854**	**$92,140,247**	**$110,747,008**	**$107,682,929**	**$84,757,737**	**$661,881,918**

Source: The university's June 2002 cost survey.

TABLE C.2

CMS Project Costs by Type of Cost and by Campus for Fiscal Years 1998–99 Through 2006–07

	Personnel Costs	Training Costs	Travel Costs	Consultant Costs	Hardware Costs	Software Costs	Other Costs	Projected Total Costs
Central*	**$ 73,714,004**	**$ 3,155,990**	**$ 1,988,238**	**$ 31,264,032**	**$76,489,981**	**$44,003,169**	**$ 5,800,515**	**$236,415,929**
Campus								
Bakersfield	3,919,590	202,094	145,648	3,204,173	178,226	627,784	186,286	8,463,801
Chancellor's Office†	4,620,400	235,500	4,000	1,682,100	90,400	27,835	53,000	6,713,235
Channel Islands	172,455	20,000		657,078	5,000	7,134		861,667
Chico	8,367,081	482,657	823,540	4,671,915	809,202	2,592,814	698,931	18,446,140
Dominguez Hills	10,020,000	1,370,000	340,000	1,470,000	200,000	144,800	285,000	13,829,800
Fresno	12,567,200	111,400	208,526	3,862,700	378,800	976,000	277,500	18,382,126
Fullerton	8,954,339	685,680	293,425	6,933,500	55,294	1,932,395	469,000	19,323,633
Hayward	8,541,966	511,100	678,500	7,620,670	287,700	284,400	571,290	18,495,626
Humboldt	6,512,882	953,587	435,694	2,982,423	186,000	125,139	447,139	11,642,864
Long Beach	19,271,579	897,218	398,374	10,469,009	1,518,218	3,502,747	1,050,983	37,108,128
Los Angeles	10,561,700	1,126,400	300,300	1,044,000	54,800	281,700	51,600	13,420,500
Maritime Academy		189,347	119,060	3,712,748	312,843	304,187		4,638,185
Monterey Bay	8,579,143	512,500	82,000	4,305,076	586,103	503,152	815,663	15,383,637
Northridge	8,491,406	589,560	222,238	7,389,894	180,000	1,224,520	121,211	18,218,829
Pomona	9,960,395	645,078	412,637	7,418,625	335,218	357,093	1,108,393	20,237,439
Sacramento	8,040,800	363,700	344,600	7,270,400	410,000	2,567,100	275,900	19,272,500
San Bernardino	7,295,863	93,669	118,654	9,043,831	179,575	3,014,656	162,736	19,908,984
San Diego	19,635,159	1,882,300	2,346,199	12,378,200		1,282,500	72,000	37,596,358
San Francisco	16,652,300	878,300	305,800	11,571,500	1,298,000	2,318,100	258,000	33,282,000
San Jose	7,023,753	2,176,000	289,169	4,514,933	140,679	1,153,043	166,625	15,464,202
San Luis Obispo	18,599,501	1,094,773	479,767	12,295,148	559,186	221,796	401,903	33,652,074
San Marcos	5,992,000	798,600	270,400	2,478,900	1,026,400	100,300	155,700	10,822,300
Sonoma‡	12,400,377	240,032	383,283	6,537,925	214,328	330,957	678,512	20,785,414
Stanislaus	6,738,522	229,250	217,815	1,906,738	72,566	233,369	118,287	9,516,547
Campus Costs	**222,918,411**	**16,288,745**	**9,219,629**	**135,421,486**	**9,078,538**	**24,113,521**	**8,425,659**	**425,465,989**
Total CMS Costs	**$296,632,415**	**$19,444,735**	**$11,207,867**	**$166,685,518**	**$85,568,519**	**$68,116,690**	**$14,226,174**	**$661,881,918**

Source: The university's June 2002 cost survey.

* Central costs are the centralized costs for the development, implementation support, and operation of CMS systemwide.

† Chancellor's office "campus" costs represent the cost of implementing human resources and finance applications at the chancellor's office.

‡ Subsequent to the June 2002 cost survey, the Sonoma campus informed us that $64,000 of its "other costs" represented costs similar to those we classified as personnel costs.

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APPENDIX D

Consultant Costs, Actual and Projected, for the Common Management System Project

The California State University's (university) reported cost information as of June 2002 for consultants working on the Common Management System (CMS) project is contained in the following tables. These costs reflect the one-time investment costs and the recurring maintenance and operations costs. The costs are divided into two categories: first, those amounts the university reported it paid to consultants through June 2002, and then those amounts the university projects it will pay to consultants from July 2002 through June 2007. All three tables include amounts that the university expects to spend for consulting services even if the specific consultant has not yet been determined. Table D.1 on the following page lists the consultants reported by the chancellor's office for the project's central costs. Table D.2 on page 151 is a summary of the consultants reported by the campuses. Table D.3 on page 152 details the consultants working at each campus. The source of the cost data is the university's June 2002 cost survey.

TABLE D.1

Chancellor's Office Central Consultant Costs

Consulting Firm	Actual Costs July 1998 Through June 2002	Projected Costs July 2002 Through June 2007	Projected Total Costs
PeopleSoft	$ 7,398,778	$ 137,308	$ 7,536,086
Not Yet Determined by Chancellor's Office		7,050,000	7,050,000
Cedar/Hunter Group	4,083,292	2,261,100	6,344,392
Io Consulting	5,662,907		5,662,907
KPMG Consulting*	1,506,417		1,506,417
Lewis & Co	713,129		713,129
Monarch Information Technology Systems	514,795		514,795
Aligne	352,508		352,508
IBM	318,110		318,110
BIT/Digiterra/Ciber	268,976		268,976
California State University, Fresno	225,812		225,812
4GL Solutions	130,800		130,800
Mercury Interactive	124,788		124,788
Vista IT	91,338		91,338
Reboot	83,750		83,750
Price Waterhouse	57,500		57,500
Sunset Data Services	40,000		40,000
John G. Kelly	39,414		39,414
International Management	35,480		35,480
Korn/Ferry International	30,750		30,750
Academe Solutions	26,437		26,437
Technical Connection	19,500		19,500
GTC Systems	19,409		19,409
Michael W. Dula, Ph.D	16,508		16,508
Epeople	16,250		16,250
Bea Systems	16,040		16,040
ITprolink	15,600		15,600
John Miller Information	4,800		4,800
Ampco Systems Parking	2,471		2,471
Adver Services	65		65
Total Chancellor's Office Central Consultant Costs	**$21,815,624**	**$9,448,408**	**$31,264,032**

Source: The university's June 2002 campus cost survey.

* The actual amount reflects $683,612 paid to firm for Io Consulting as a subcontractor.

TABLE D.2

Campus Consultant Costs

Consulting Firm	Actual Costs July 1998 Through June 2002	Projected Costs July 2002 Through June 2007	Projected Total Costs
Not Yet Determined by Campus		$ 61,801,855	$ 61,801,855
Cedar/Hunter Group	$ 9,393,876	23,231,129	32,625,005
Io Consulting	9,826,229	10,803,655	20,629,884
KPMG Consulting	6,479,099		6,479,099
PeopleSoft	3,451,590	1,527,000	4,978,590
Price Waterhouse	2,003,023		2,003,023
Sonoma State University	297,919	1,100,000	1,397,919
Monarch Information Technology Systems	123,472	1,054,680	1,178,152
EQV Consulting	227,783	795,200	1,022,983
BIT/Digiterra/Ciber	746,612	160,000	906,612
Signature	314,152		314,152
Bennett (SDB)	50,000	250,000	300,000
Financial Aid Services		226,331	226,331
Hershey Business Systems	23,430	175,000	198,430
Informed Decision	137,241	11,500	148,741
Independent–Jacobson	136,200		136,200
Fugatt		124,600	124,600
Walt Patterson	105,800		105,800
Carrera-Maximus Consulting	105,700		105,700
CSLink Consulting		100,000	100,000
IBM Consulting	91,800		91,800
Provista	81,789	10,000	91,789
San Jose State University	91,500		91,500
Deloitte Touche	71,383		71,383
Independent-Miller	71,348		71,348
Sargent	67,500		67,500
Information Management Systems Consulting	50,000		50,000
Sunset Data	50,000		50,000
Prism Computing	15,000		15,000
Page Consulting	14,950		14,950
CMC	9,000		9,000
Sierra Systems		6,500	6,500
Orion	5,000		5,000
EPNL	2,400		2,400
Amelia Assoc-Citrix Consulting	240		240
Total Campus Consultant Costs	**$34,044,036**	**$101,377,450**	**$135,421,486**

Source: The university's June 2002 cost survey.

TABLE D.3

Consultant Costs by Campus

Campus	Actual Costs July 1998 Through June 2002	Projected Costs July 2002 Through June 2007	Projected Total Costs
Bakersfield			
Not Yet Determined by Campus		$3,067,925	$3,067,925
Monarch Information Technology Systems	$ 48,323	64,680	113,003
EQV Consulting	19,745		19,745
Io Consulting	3,500		3,500
Totals	**71,568**	**3,132,605**	**3,204,173**
Chancellor's Office*			
Io Consulting	657,500	734,600	1,392,100
Not Yet Determined by Chancellor's Office		257,000	257,000
Cedar/Hunter Group	33,000		33,000
Totals	**690,500**	**991,600**	**1,682,100**
Channel Islands			
Io Consulting	92,034	550,094	642,128
Page Consulting	14,950		14,950
Totals	**106,984**	**550,094**	**657,078**
Chico			
Not Yet Determined by Campus		3,900,000	3,900,000
Io Consulting	539,367		539,367
Independent–Jacobson	136,200		136,200
Independent–Miller	71,348		71,348
PeopleSoft	25,000		25,000
Totals	**771,915**	**3,900,000**	**4,671,915**
Dominguez Hills			
Not Yet Determined by Campus		1,470,000	1,470,000
Totals		**1,470,000**	**1,470,000**
Fresno			
Cedar/Hunter Group	1,865,300	776,600	2,641,900
BIT/Digiterra/Ciber	695,400	160,000	855,400
PeopleSoft	120,700	30,000	150,700
Monarch Information Technology Systems	52,900	70,000	122,900
IBM Consulting	91,800		91,800
Totals	**2,826,100**	**1,036,600**	**3,862,700**
Fullerton			
Not Yet Determined by Campus		5,933,500	5,933,500
Monarch Information Technology Systems		900,000	900,000
Hershey Business Systems		100,000	100,000
Totals		**6,933,500**	**6,933,500**
Hayward			
Not Yet Determined by Campus		4,630,000	4,630,000
KPMG Consulting	1,424,872		1,424,872
Io Consulting	166,398	1,070,000	1,236,398
Signature	96,400		96,400
San Jose State University	91,500		91,500
Informed Decisions	54,600		54,600
Price Waterhouse	51,700		51,700
Cedar/Hunter Group	30,200		30,200
Orion	5,000		5,000
Totals	**1,920,670**	**5,700,000**	**7,620,670**

Campus	Actual Costs July 1998 Through June 2002	Projected Costs July 2002 Through June 2007	Projected Total Costs
Humboldt			
Cedar/Hunter Group	$ 58,173	$2,579,070	$2,637,243
Not Yet Determined by Campus		345,180	345,180
Totals	**58,173**	**2,924,250**	**2,982,423**
Long Beach			
Cedar/Hunter Group	2,032,665	3,169,400	5,202,065
Io Consulting	2,740,492	1,160,000	3,900,492
PeopleSoft	147,150	190,000	337,150
Bennett (SDB)	50,000	250,000	300,000
Financial Aid Services		226,331	226,331
Fugatt		124,600	124,600
Walt Patterson	105,800		105,800
CSLink Consulting		100,000	100,000
Hershey Business Systems	23,430	75,000	98,430
Informed Decisions	62,641	11,500	74,141
Totals	**5,162,178**	**5,306,831**	**10,469,009**
Los Angeles			
Not Yet Determined by Campus		900,000	900,000
Information Management Systems Consulting	50,000		50,000
Sunset Data	50,000		50,000
PeopleSoft	35,100		35,100
Sierra Systems		6,500	6,500
EPNL	2,400		2,400
Totals	**137,500**	**906,500**	**1,044,000**
Maritime Academy			
Sonoma State University	297,919	1,100,000	1,397,919
Io Consulting	295,450	910,000	1,205,450
Cedar/Hunter Group	1,059,379		1,059,379
KPMG Consulting	50,000		50,000
Totals	**1,702,748**	**2,010,000**	**3,712,748**
Monterey Bay			
Not Yet Determined by Campus		2,675,000	2,675,000
Io Consulting	555,200	1,007,376	1,562,576
Sargent	67,500		67,500
Totals	**622,700**	**3,682,376**	**4,305,076**
Northridge			
KPMG Consulting	3,423,000		3,423,000
PeopleSoft	2,692,894		2,692,894
Io Consulting	624,000	650,000	1,274,000
Totals	**6,739,894**	**650,000**	**7,389,894**
Pomona			
Cedar/Hunter Group	1,566,875	5,800,000	7,366,875
Price Waterhouse	51,750		51,750
Totals	**1,618,625**	**5,800,000**	**7,418,625**
Sacramento			
Not Yet Determined by Campus		4,623,800	4,623,800
PeopleSoft	363,100	1,287,000	1,650,100
EQV Consulting	201,300	795,200	996,500
Totals	**564,400**	**6,706,000**	**7,270,400**

continued on the next page

Campus	Actual Costs July 1998 Through June 2002	Projected Costs July 2002 Through June 2007	Projected Total Costs
San Bernardino			
Not Yet Determined by Campus		$ 6,500,000	$ 6,500,000
Price Waterhouse	$ 1,796,073		1,796,073
Io Consulting	378,025		378,025
Signature	168,472		168,472
Carrera-Maximus Consulting	105,700		105,700
BIT/Digiterra/Ciber	51,212		51,212
KPMG Consulting	23,000		23,000
CMC	9,000		9,000
Monarch Information Technology Systems	7,249		7,249
PeopleSoft	5,100		5,100
Totals	**2,543,831**	**6,500,000**	**9,043,831**
San Diego			
Not Yet Determined by Campus		12,378,200	12,378,200
Totals		**12,378,200**	**12,378,200**
San Francisco			
Not Yet Determined by Campus		11,571,500	11,571,500
Totals		**11,571,500**	**11,571,500**
San Jose			
Cedar/Hunter Group	541,185	2,513,815	3,055,000
Io Consulting	860,030	286,185	1,146,215
KPMG Consulting	261,968		261,968
Price Waterhouse	51,750		51,750
Totals	**1,714,933**	**2,800,000**	**4,514,933**
San Luis Obispo			
Cedar/Hunter Group	125,651	7,472,744	7,598,395
Io Consulting	2,150,528	2,274,900	4,425,428
Provista	81,789	10,000	91,789
PeopleSoft	37,546	20,000	57,546
Price Waterhouse	51,750		51,750
Monarch Information Technology Systems	15,000	20,000	35,000
Informed Decision	20,000		20,000
Prism Computing	15,000		15,000
Amelia Assoc-Citrix Consulting	240		240
Totals	**2,497,504**	**9,797,644**	**12,295,148**
San Marcos			
Not Yet Determined by Campus		1,250,000	1,250,000
Io Consulting	18,200	1,171,000	1,189,200
PeopleSoft	25,000		25,000
KPMG Consulting	14,700		14,700
Totals	**57,900**	**2,421,000**	**2,478,900**
Sonoma			
Cedar/Hunter Group	2,081,448	919,500	3,000,948
Io Consulting	745,505	989,500	1,735,005
KPMG Consulting	1,281,559		1,281,559
Not Yet Determined by Campus		399,750	399,750
Deloitte Touche	71,383		71,383
Signature	49,280		49,280
Totals	**4,229,175**	**2,308,750**	**6,537,925**
Stanislaus			
Not Yet Determined by Campus		1,900,000	1,900,000
EQV Consulting	6,738		6,738
Totals	**6,738**	**1,900,000**	**1,906,738**
Total Campus Consultant Costs	**$34,044,036**	**$101,377,450**	**$135,421,486**

Source: The university's June 2002 cost survey.

* Chancellor's office "campus" costs represent the cost of implementing the human resources and finance applications at the chancellor's office.

APPENDIX E

Common Management System Functionality at Each Campus

As discussed in Chapter 3, implementing the Common Management System (CMS) software throughout the California State University (university) is resulting in a wide variation of functionality across campuses. The tables in this appendix illustrate the CMS functionality being implemented and planned on each university campus. CMS includes three applications whose functionality is presented in the tables of this appendix: Table E.1 on page 157 presents the finance application; Table E.2 beginning on page 158 displays the human resources application; and Table E.3 beginning on page 160 presents the student administration application.

The chancellor's office and the 23 university campuses are noted across the top of each table along with the version of the application currently in use and the version each campus plans to use in the future. Each application consists of functionality elements—modules, sub-modules, or university-created functionality—that represent different degrees of functionality for each CMS application. Because the more recent 8.x versions of the CMS applications were not available when the university's campuses began implementing CMS, some campuses began their initial CMS implementation with the 7.x versions of the human resources and finance applications. The student administration application did not become available for use until the 8.x version was released.

The version of each application and the CMS functionality elements being implemented, at the chancellor's office and at all 23 campuses, is based on the university's response to our October 2002 module survey. We divided the responses into two groups. The first group represents CMS functionality that each campus included in its June 2002 cost survey. The status of these functionality elements is defined as follows:

- Implemented (I)—The campus already has implemented and is using this version of the application and this functionality element as of June 2002.

- Planned (P)—The campus plans to implement this version of the application and this functionality element after June 2002, and its projected costs in the June 2002 cost survey reflect these plans.

- To Be Determined (TBD)—The campus considered this functionality element when it reported costs for the cost survey, but its planning process is incomplete, with a final decision yet to be made.

The second group represents CMS functionality that was not included in the implementation costs when the campus completed its June 2002 cost survey and is defined as follows:

- Anticipated (A)—The campus anticipates implementing this functionality element at some future time and at an additional cost.

- Blank—The campus did not indicate it has plans to implement this functionality element.

TABLE E.1

The Functionality of the Common Management System Finance Application

Application Version	Bakersfield	Chancellor's Office	Channel Islands	Chico	Dominguez Hills	Fresno	Fullerton	Hayward	Humboldt	Long Beach	Los Angeles	Maritime Academy	Monterey Bay	Northridge	Pomona	Sacramento	San Bernardino	San Diego	San Francisco	San Jose	San Luis Obispo	San Marcos	Sonoma	Stanislaus	Totals I	Totals P	Totals A	Totals TBD	Totals Blank	Grand Totals
FIS (7.5 version)		P	I	I		I		I		I		I	I	I	I	P	I			I	I		I		13	2	0	0	9	24
FIS (8.4 version)	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	0	24	0	0	0	24
Functionality Elements*																														
General Ledger																														
General Ledger	P	P	I	I	P	I	P	I	P	I	P	I	I	I	I	P	I	P	P	I	I	P	I	P	13	11	0	0	0	24
Commitment Control	P			P	P	P	P			P	P	P		P				P	TBD	P		P	P	P	0	14	0	1	9	24
Purchasing																														
Procurement	P	P	I	I	P	I	P	I	P	I	P	I	I	I	I	P	I	P	P	I	I	P	I	P	13	11	0	0	0	24
Payables																														
Accounts Payable	P	P	I	I	P	I	P	I	P	I	P	I	I	I	I	P	I	P	P	I	I	P	I	P	13	11	0	0	0	24
Asset Management	P			P	P	P		P	P	P	P	P	A	P	P	P	P	P	P	P	P	P	P	P	0	20	1	0	3	24
Receivables	P			P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	TBD	P	P	P	P	P	0	20	1	1	2	24
Billing	P			P	P	P	P	P	P	P	P	P	A	P	P	P	P	P	TBD	P	P	P	P	P	0	20	1	1	2	24
Budgets				I	A				P	TBD	P	I		P				P	A	A	P	P	I	P	3	7	3	1	10	24
Inventory					A				A	TBD	P	A		P					A	A		P	A		0	3	6	1	14	24
Projects				A	A	A			A	TBD	P	A		A				P	A	A	P	P	A		0	4	9	1	10	24
Grants				A	A	A			A	TBD	P	A	A	A				A	A	A		P	A	TBD	0	2	11	2	9	24
Expenses†					A	A			A	TBD	P	A						TBD	A		TBD		A	TBD	0	1	6	4	13	24
Elements Implemented	0	0	3	4	0	3	0	3	0	3	0	4	3	3	3	0	3	0	0	3	3	0	4	0						
Elements Planned	7	3	0	4	7	4	6	3	7	4	12	4	0	6	3	6	3	9	4	4	5	11	4	8						
Elements to Be Determined	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	1	3	0	1	0	0	2						
Elements Anticipated	0	0	0	2	5	3	0	0	4	0	0	4	4	2	0	0	0	1	5	4	0	0	4	0						
Totals	**7**	**3**	**3**	**10**	**12**	**10**	**6**	**6**	**11**	**12**	**12**	**12**	**7**	**11**	**6**	**6**	**6**	**11**	**12**	**11**	**9**	**11**	**12**	**10**						

Source: The Bureau of State Audits' October 2002 Module Survey, which reflects the status of functionality elements as of June 2002.

* Elements contain various degrees of functionality.

† This functionality element is owned by a campus and is not included in the CMS software that is centrally supported by the chancellor's office.

TABLE E.2

The Functionality of the Common Management System Human Resources Application

Application Version	Bakersfield	Chancellor's Office	Channel Islands	Chico	Dominguez Hills	Fresno	Fullerton	Hayward	Humboldt	Long Beach	Los Angeles	Maritime Academy	Monterey Bay	Northridge	Pomona	Sacramento	San Bernardino	San Diego	San Francisco	San Jose	San Luis Obispo	San Marcos	Sonoma	Stanislaus	Totals I	Totals P	Totals A	Totals TBD	Totals Blank	Grand Totals
HR (7.6 version)						I		I		I	I	I		I	I		I			I	I		I		11	0	0	0	13	24
HR (8.0 version)	P	P	I	I	P	I	P	P	P	P	P	I	P	I	P	P	P	P	P	I	P	I	I	P	8	16	0	0	0	24
Functionality Elements*																														
Human Resources																														
Administer Workforce																														
Employment Processing	P			I	P	I	P		P	I	I	I	P	I	I	P	I	P	P	I	I	I	I	P	12	9	0	0	3	24
CSU_Faculty Assignments	P			A	A	I			P		P	I	P		I	P	I	P	TBD	I	I	P	I	P	7	8	2	1	6	24
CSU_Recruit/Termination	P			I	P	I			TBD	I	I	I		P	I	P	I	P	P	I	I	P	I	P	10	8	0	1	5	24
CSU_Work Study Award	A			A	TBD	I	P		P	I	P	I			P		P	P	TBD	P		P	I	P	4	9	2	2	7	24
CSU_Student Employment	A	P	I	I	P	I	P	I	TBD	I	P	I	P		I	P	I	P	P	I	I	P	I	P	11	10	1	1	1	24
CSU_SSI/GSI Probation to Permanent	P	P	I	I	TBD	I	P	I	P	I	I	I		P	I	P	I	P	P	I	I	P	I	P	12	10	0	1	1	24
CSU_Salary Schedule Load	P	P	I	I	P	I	P	I	P	I	I	I	P	I	I	P	I	P	P	I	I	P	I	P	13	11	0	0	0	24
Report Regulations	P	P	I	A	TBD	I	P	I	P	I	P	I	P	I	I	P	I	P	TBD	I	I	P	I	P	11	10	1	2	0	24
Develop Workforce																														
Administer Training					A	I			TBD		P	A		A	P			P	TBD	I		P	A	TBD	2	4	4	3	11	24
Manage Competencies			I	A	A	P			TBD		P	I		I	P				TBD	I		P	I	TBD	5	4	2	3	10	24
Manage Positions	A	P	I	I	P	I	P	I	TBD	I	I	I	P	P	I	P	I	P	P	I	I	P	I	P	12	10	1	1	0	24
Manage Faculty Events	A			A	A	I			TBD	TBD	P	A	P	P	P				TBD	I	I	P	A	TBD	3	5	5	4	7	24
Recruit Workforce	P	P		I	P	I	P	I	P	I	I	I	A	P	I			P	P	I	I	I	I	P	11	9	1	0	3	24
CSU_Temporary Faculty	P			I	A	I		I	P	TBD	I	I	P		I	P		P	P	I	I	P	I	P	9	8	1	1	5	24
CSU_TF WTU Accumulation	P			I	A	I		I	TBD	P	P	I	P	P	P				P	I	I	P	I	P	7	9	1	1	6	24
Time & Labor																														
Time & Labor	P	P		A	P	I	P		P	I	P	I	A	I	I	P	I	P	P	I	I	P	I	P	9	11	2	0	2	24
CSU_T&L Account Code Override	P	P		A	P	I			TBD	I	P	I	A		I	P	I	P	TBD	I	I	P	I	P	8	8	2	2	4	24
CSU_ESP Interface	P	P	TBD	I	P	I	P		P	I	P	I	P	I	I	P	I	P	P	I	I	P	I	P	10	12	0	1	1	24
CSU_Certify Master Payroll	P				P	I			TBD		P	I	A	I	P	P	I	TBD	P	I	I	P	I	P	7	8	1	2	6	24
CSU_PIP Interface	P	P		A	P	I	P		P	I	P	I	A	I	I	P	I	P	P	I	I	P	I	P	9	11	2	0	2	24

Functionality Elements*	Bakersfield	Chancellor's Office	Channel Islands	Chico	Dominguez Hills	Fresno	Fullerton	Hayward	Humboldt	Long Beach	Los Angeles	Maritime Academy	Monterey Bay	Northridge	Pomona	Sacramento	San Bernardino	San Diego	San Francisco	San Jose	San Luis Obispo	San Marcos	Sonoma	Stanislaus	Totals I	Totals P	Totals A	Totals TBD	Totals Blank	Grand Totals
Payroll																														
Payroll			I						P		P		P		I		I				I			P	4	4	0	0	16	**24**
Labor Cost Distribution	P	P	I	I	P	I	P	I	P	I	P	I	P	I	I	P	I	P	P	I	I	P	I	P	12	12	0	0	0	**24**
CSU_Positive Pay Recon	P	P			P	I			TBD	TBD	P	I	A			P		TBD	TBD	I	I	P	I	P	5	7	1	4	7	**24**
Administer Payroll Interface			I		P	A			TBD		P	I	P					P	TBD	I	I	TBD	I	P	5	5	1	3	10	**24**
Administer Automated Benefits				A	P	A			TBD		P	A						P	TBD		P	TBD	A	TBD	0	4	4	4	12	**24**
Administer Base Benefits	P	P	I	P	P	I	P	I	P		I	I	P	I	I	P	I	P	P	I	I	P	I	P	11	12	0	0	1	**24**
CSU_ACES Interface	P	P		P	TBD	A	P	I	P	I	I	I	P	P	I			P	P	I	I	P	I	P	8	11	1	1	3	**24**
CSU_Leave Accounting	P			A	TBD	P	P		P	I	P	A		I	P	A		P	P	P	I	P	A	P	3	11	4	1	5	**24**
Administer COBRA	A			A	A				P	TBD	P	I		P				P	TBD	I		P	I	P	3	6	3	2	10	**24**
Administer FSA					A				P		I	A		P				P	TBD	I			A	P	2	4	3	1	14	**24**
Benefits Administration				A		A					P			P		A		P	A		P	P		TBD	0	5	4	1	14	**24**
Self-Service Functionality Elements*																														
eBenefits																														
eBenefits		P		A	A	P	P	P	A	TBD	P	A	A	P	P	A		P	P	P	P	P	A	TBD	0	12	7	2	3	**24**
eRecruit																														
Applicant		P		A	A	P	P	P	A	TBD	P	A	A	P	A		A	P	P	P		P	A	TBD	0	10	8	2	4	**24**
eProfile																														
Employee		P		A	A	I	P	P	A	TBD	P	A	P	P	A	A		P	P	P	P	P	A	P	1	12	7	1	3	**24**
Faculty				A	A	I		P	A	TBD	P	A	A	P		A		P	A	P	P	P	A	P	1	8	8	1	6	**24**
Optionee				A	A			P	A		P	A		P				TBD			P		A	TBD	0	4	5	2	13	**24**
eCompensation					A	P		P		TBD	P	A		P				P	TBD			P	A	TBD	0	6	3	3	12	**24**
eDevelopment				A	A			P			P	A		P				P	A			TBD	A	TBD	0	4	5	2	13	**24**
ePay						P		P	A		P			P	P							P		TBD	0	6	1	1	16	**24**
Manager				A		A		P	A		P	A		P				P	A	P		P	A	TBD	0	6	6	1	11	**24**
Web time entry by employee				A		P	P	P	A	TBD	P	TBD	A	I		A		TBD	P	P	P	TBD	TBD	TBD	1	7	4	6	6	**24**
Elements Implemented	0	0	10	11	0	24	0	11	0	16	10	24	0	12	18	0	16	0	0	26	24	2	24	0						
Elements Planned	19	17	0	2	16	7	19	10	18	1	31	0	16	19	9	17	1	32	21	8	7	32	0	28						
Elements to Be Determined	0	0	1	0	5	0	0	0	12	10	0	1	0	0	0	0	0	4	13	0	0	4	1	13						
Elements Anticipated	5	0	0	20	15	5	0	0	8	0	0	13	10	1	2	6	1	0	4	0	0	0	13	0						
Totals	**24**	**17**	**11**	**33**	**36**	**36**	**19**	**21**	**38**	**27**	**41**	**38**	**26**	**32**	**29**	**23**	**18**	**36**	**38**	**34**	**31**	**38**	**38**	**41**						

Source: The Bureau of State Audits' October 2002 Module Survey, which reflects the status of functionality elements as of June 2002.

* Elements contain various degrees of functionality.

TABLE E.3

The Functionality of the Common Management System Student Administration Application

	Bakersfield	Chancellor's Office	Channel Islands	Chico	Dominguez Hills	Fresno	Fullerton	Hayward	Humboldt	Long Beach	Los Angeles	Maritime Academy	Monterey Bay	Northridge	Pomona	Sacramento	San Bernardino	San Diego	San Francisco	San Jose	San Luis Obispo	San Marcos	Sonoma	Stanislaus	Totals				Grand Totals
Application Version																									I	P	A	TBD	Blank	
SA (8.0 version)	P		A	P	P	I	P	P	P	P	P	I	P	P	P	P	P	P	P	P	P	P	I	P	3	19	1	0	1	24
Functionality Elements*																														
Campus Community																														
Manage Student Data	P		A	P	P	I	P	P	P	P	P	I	P	P	P	P	P	P	P	P	P	P	I	P	3	19	1	0	1	24
Admissions																														
Admit Student	P			P	P	I	P	P	P	P	P	I	P	P	P	P	P	P	P	P	P	P	I	P	3	19	0	0	2	24
Enroll Student	P			P	P	P	P	P	P	P	P	I	P	P	P	P	P	P	P	P	P	P	I	P	2	20	0	0	2	24
Financial Aid																														
Financial Aid	P		A	P	P	I	P	P	P	P	P	I	P	P	P	P	P	P	P	P	P	P	I	P	3	19	1	0	1	24
Student Records																														
Maintain Student Records	P		A	P	P	I	P	P	P	P	P	I	P	P	P	P	P	P	P	P	P	P	I	P	3	19	1	0	1	24
Student Financials																														
Provide Financial Services	P		A	P	P	I	P	P	P	P	P	I	A	P	P	P	P		P	P	P	P	I	P	3	17	2	0	2	24
Cashiering–PeopleSoft Functionality	P				TBD				P		P	I			P	A			P		P		I	P	2	7	1	1	13	24
Academic Advisement																														
Degree Audit	A		A	P	A	P		TBD	A	P	P	P	A	A	P	P		A	TBD		TBD	P	P	TBD	0	9	7	4	4	24
Advancement																														
Contributor Relations	A			A	A	A			A		P	I						P	A	A			I	A	2	2	8	0	12	24
Self-Service Functionality Elements*																														
Personal Portfolio																														
Personal Portfolio	P				A	I	P	P	P	P	P	A	P	P		A	P	P	A	P	P	P	A	P	1	14	5	0	4	24
Community Access																														
Community Access	P				A	A	P	P	P	P	P	A						P	A	P	P	P	A	P	0	11	5	0	8	24
Community Directory																														
Community Directory	P			A	A	A		P	P		P	A				A		P	A	P	P	P	A	P	0	9	7	0	8	24
Outreach																														
Applicant	P			P	A	I	P	P	P	P	P	A		P			P	P	A	P		P	A	P	1	13	4	0	6	24
Prospect	P			P	A	I	P	P	P	P	P	I		P			P	P	A	P		P		P	2	13	2	0	7	24

Self-Service Functionality Elements*	Bakersfield	Chancellor's Office	Channel Islands	Chico	Dominguez Hills	Fresno	Fullerton	Hayward	Humboldt	Long Beach	Los Angeles	Maritime Academy	Monterey Bay	Northridge	Pomona	Sacramento	San Bernardino	San Diego	San Francisco	San Jose	San Luis Obispo	San Marcos	Sonoma	Stanislaus	Totals I	Totals P	Totals A	Totals TBD	Totals Blank	Grand Totals
Learner Services																														
Learner Services	P				A	I	P	P	P	P	P			P			P	P		P	P	P	I	P	2	13	1	0	8	**24**
Class Registration	P			P	A	P	P	P	P	P	P			P	P		P	P	A	P	P	P	I	P	1	16	2	0	5	**24**
Student Bill (Tuition Calc)	P			P	A	P	P	P	P	P	P			P	P		P		A	P	P	P	I	P	1	15	2	0	6	**24**
Learning Management																														
Learning Management	P					I	P	P	P	P	P							P		P	P	P	A	P	1	11	1	0	11	**24**
Degree Progress Report (Student)	P			P	A	P	P	P	P	P	P				P			P	A	P	P	P	A	P	0	14	3	0	7	**24**
Degree Progress Report (Faculty)	P			P	A	P	P	P	P	P	P							P	A	P	P	P	A	P	0	13	3	0	8	**24**
Involvement	A			A	A	A			A		P	A						P	A	A			A		0	2	9	0	13	**24**
Portal - PS Campus Portal	P			P	P	I		P	P	P	P	A	A	A	P	P	A	P	A	P	P	P	A	P	1	14	6	0	3	**24**
Elements Implemented	0	0	0	0	0	11	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	11	0						
Elements Planned	19	0	0	14	7	6	16	18	19	18	22	1	6	12	12	8	12	18	7	18	17	19	1	19						
Elements to Be Determined	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1						
Elements Anticipated	3	0	5	3	13	4	0	0	3	0	0	6	3	2	0	3	1	1	12	2	0	0	9	1						
Total	**22**	**0**	**5**	**17**	**21**	**21**	**16**	**19**	**22**	**18**	**22**	**16**	**9**	**14**	**12**	**11**	**13**	**19**	**20**	**20**	**18**	**19**	**21**	**21**						

Source: The Bureau of State Audit's October 2002 Module Survey, which reflects the status of functionality elements as of June 2002.

* Elements contain various degrees of functionality.

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Agency's comments provided as text only.

The California State University
Office of the Chancellor
401 Golden Shore
Long Beach, CA 90802-4210

February 19, 2003

Ms. Elaine Howle*
State Auditor
Bureau of State Audits
555 Capitol Mall, Suite 300
Sacramento, California 95814

Dear Ms. Howle:

The California State University welcomes the opportunity to respond to the draft audit of its Common Management Systems project. The Bureau of State Audits' time and effort dedicated to the comprehensive review of the California State University's Common Management Systems is appreciated.

The auditors' recommendations will be beneficial for the continued development and improvement of the Common Management System effort in the CSU. We have already implemented or begun to implement some of the recommendations and will be acting on the others.

The attached document will provide responses to each of the auditors' recommendations.

With kind regards,

Sincerely,

(Signed by: Charles B. Reed)

Charles B. Reed
Chancellor

Enclosure

* California State Auditor's comments begin on page 175.

The CSU appreciates the time and effort dedicated by the Bureau of State Audits to the comprehensive review of the CSU's Common Management System. The auditor's recommendations will be beneficial for the continued development and improvement of the Common Management System effort in the CSU. The CSU further appreciates this opportunity to respond to the draft audit of its Common Management Systems project. We have reviewed the draft and find that the facts are correctly reported in the audit. However, we do not always agree with the interpretation of those facts.

The CSU agrees in nearly all cases with the auditor's recommendations, although we do not agree fully with all the findings of the audit. As reported in the audit draft, we have already implemented or begun to implement some of the recommendations. We will be acting on the others. We have provided responses to each of the auditor's recommendations and have organized those responses in the same order as they were presented in the audit.

Projects of this size and complexity lend themselves to a variety of equally valid approaches. The standards and approaches suggested by the auditors are appropriate in some enterprise resource planning (ERP) implementations and are useful guidelines as we move to complete the CMS project. The CSU's implementation approach to the CMS project is working and more importantly continues to be effective. In the final analysis, large ERP projects such as CMS are judged more on the outcomes they achieve than the implementation process they utilize.

The CSU stands by the outcomes achieved by the CMS project. The majority of the 24 CSU locations (campuses and the Chancellor's Office) are already successfully operational in CMS, 14 on finance, 15 on human resources, and 5 on student administration. By July of 2003, those numbers will increase to 15 on finance, 19 on human resources, and 6 on student administration. We are completing the CMS implementation within our original budget estimates and on the schedule we proposed. Together, these achievements constitute a successful project by industry and higher education standards.

Chapter 1 - CMS BUSINESS CASE

- RECOMMENDATION: To ensure that the university's future IT projects are appropriate expenditures of state resources, the university should adopt policies and procedures that require a feasibility study before the acquisition and implementation of significant IT projects. Such a feasibility study should include at least a clearly defined statement of the business problems or opportunities being addressed by the project, as well as an economic analysis of the project's life-cycle costs and benefits compared with the current method of operation.
  - **RESPONSE: Agree** – The CSU will adopt policies and procedures that require a feasibility study prior to the acquisition and implementation of significant IT projects. The CSU is intending to complete a two-phase cost benefit analysis of the current CMS project to help demonstrate current and future benefits of the project to campuses and the system. The first phase will have been completed by March 15, 2003.

- RECOMMENDATION: To measure the benefits achieved through common management and business practices, the university should establish quantitative measures of increased business process efficiencies through CMS, in addition to any qualitative factors being assessed. Such measures should identify the increased productivity of staff, reduced operational costs, or both.
  - **RESPONSE: Agree** –As part of our ongoing process to assess the successes of our CMS project the CSU will examine the establishment of quantitative measures of business process efficiencies.

Comments on Chapter 1 Findings

The CSU began the Information Technology Strategies (ITS) initiative in the mid 1990's to improve the university's application of technology to teaching, learning, and managing. The university implemented an extensive planning and development process that included an assessment of the current state of

technology, development of a future state vision, identification and prioritization of potential initiatives, and finally the development of the first wave of initiatives. The first wave initiatives were selected based on their ability to support the CSU's mission, the value to stakeholders (students, faculty, staff, institutions), their potential cost efficiencies, and their support of institutional values. The CSU invested over two years in the development and refinement of the ITS. The CSU's ITS has guided the universities information technology investments since March of 1996 when it was endorsed by the Board of Trustees. One of the first eleven initiative investments was the Common Management System.

In 1996-97, campuses began the effort to develop a collaborative to replace their aging and limited administrative systems with systems to provide students, faculty and staff the level of administrative support required of a competitive university in the 21st century. The business case for the campuses was compelling. The existing campus administrative systems were aging. They could not provide the integrated, comprehensive administrative services required to meet the universities needs. Vendors had indicated that they would no longer support the legacy software. The campuses understood the need to provide more comprehensive services to students, faculty and staff. Since so many campuses were looking to replace their systems the only question was to determine how and not whether to go about replacing those systems.

Cost benefit analyses and feasibility studies are necessary and valuable tools when a business entity has a choice in a course of action, but they are not as valuable or necessary when only one course of action is available. In 1996-97, the CSU was spending $100 million on faltering administrative systems and had no human resources system. With systems not meeting campus needs and soon to be unsupported by vendors, the CSU's focus was on adopting the most cost-effective replacement strategy, not on studies to determine if replacement was necessary. To provide the services and management capacity required for the new century, the CSU had to replace its financial and student systems and implement a modern human resources system.

While a comprehensive feasibility and cost benefit study was not needed to make a decision to move forward, an understanding of the cost of new systems was important to campuses and the system. The system and each implementing campus did determine potential cost and develop a financial plan to manage the implementation.

The CMS effort focused on the objectives for participating campuses of:

- Minimizing the cost to implement and maintain application software
- Minimizing the time to implement application software
- Adopting best practices or a foundation for best practice, where possible during the implementation process
- Establishing standards to share information for common reporting purposes
- Promoting multi-campus cooperation and collaboration
- Leveraging limited resources
- Providing ready access to current, accurate, and complete administrative information and the means to use it in an efficient manner

The opportunities for efficiency and effectiveness were compelling. The limitations of funding to provide systems were obvious. Many campuses could not afford to purchase and develop systems on their own. Further, they could not afford to redevelop or expand existing data centers. The campuses and the university collectively saw opportunities for cost avoidance and minimizing the cost of developing new systems through collaboration and cooperation among the campuses. It would be more economical to purchase, implement and maintain a single software system collaboratively than to purchase, implement, and maintain twenty-three separate systems. The CSU focused on the efficiencies available in leveraging its size, sharing the work of selecting, developing, implementing, and operating administrative systems, and in negotiating the best deal through that size and collaboration.

Chapter 2 – PROJECT COSTS

- RECOMMENDATION: To ensure that it adequately monitors and controls project costs, the university should take the following actions:
- Establish a mechanism to collect and compile system-wide project cost information, including campus costs. The university should determine what level of quarterly cost information it needs from campuses to monitor the project. Further, the university should collect comprehensive cost information annually, including in-kind, upgrades, and integration costs.
- Compare the collected project costs against the approved system-wide project budget and publish this information in a quarterly status report.
  - **RESPONSE: Agree** –The CSU will determine the campus quarterly and annual cost information necessary to monitor the project and will establish a mechanism to collect and report that data on a system-wide basis.

- RECOMMENDATION: Additionally the university should ensure that it includes all costs of the CMS project in its annual reports to the Legislature.
  - **RESPONSE: Agree** - The CSU will implement annual reporting of campus and central expenditures in the annual Measures of Success (MOS) reports to the Legislature. The university welcomes the continued collaboration with the Legislative Analysts Office and the Legislature to refine the Measures of Success as our collective needs develop. As circumstances change, we are committed to change the MOS procedures, data, and reporting.

- RECOMMENDATION: Finally, the university should establish a system-wide funding plan for the CMS project that includes campuses. Further, before it begins any major information technology project in the future, it should ensure that it has a funding plan in place that covers the entire scope of the project.
  - **RESPONSE: Agree** – The CSU has a funding plan in place for the central CMS project. The CSU will also ensure that its funding plan includes campuses. The CSU will ensure it has a comprehensive funding plan in place for future major information technology projects.

Comments on Chapter 2 Findings

The current projected implementation cost of the CMS project is below the originally projected costs. The CSU projected implementation costs of $350 to $400 million over seven years when the project began. According to the cost areas defined in the initial CMS projections, the CSU is meeting budget projections. Consistent with the delegation of fiscal responsibility to campuses, each CSU campus has established and monitored budgets and expenditures related to CMS while the Chancellor's Office has monitored budgets and expenditures for the central project. While we did not collect the costs centrally, campuses have monitored local costs. The CSU is now collecting campus expenditure information to report on a system-wide basis, although responsibility for management of campus expenditures will remain with the campuses. The university holds campuses accountable for their overall budgets and expenditures. The CMS project has been implemented consistent with this overall delegation of responsibility and authority.

Chapter 3 – BUSINESS OBJECTIVES

- RECOMMENDATION: To ensure that it minimizes the costs and time to implement and maintain its CMS software, the university should do the following:
- Reassess the design of CMS and evaluate the economies that can be achieved by reducing the number of separate CMS databases throughout the university that currently must be tested separately when campuses implement software revisions that reflect modifications and upgrades.

- **RESPONSE: Agree** – The CSU will evaluate the economies and benefits that could be achieved by alternative technology approaches.

- Continue its recently-established practice of tracking the actual hours spent to develop modifications to the CMS software. It should consider this information when estimating the costs and time associated with developing and applying future modifications to new versions of the vendor software, and when evaluating the associated maintenance costs in reapplying, testing and implementing its current and future modifications.
  - **RESPONSE: Agree** – The CSU will continue to implement and improve its processes for managing modifications including tracking the actual hours spent to deliver modifications to the campuses.

- Define the scope and associated costs of CMS by identifying the specific functionality that is necessary to achieve the university's expectations expressed in the CMS project charter.
  - **RESPONSE: Agree** – The CSU will identify the specific functionality that is necessary to achieve the expectations documented in the CMS Project Charter.

- Further, examine the cost associated with campuses' plans to add functionality elements to increase functionality beyond the defined scope.
  - **RESPONSE: Agree –** The CSU will examine the cost associated with campuses' plans to add PeopleSoft functionality beyond the defined scope.

- RECOMMENDATION: Also, when procuring information technology systems or software in the future, the university should evaluate its specific business processes against vendor products before procurement, then select vendors that best accommodate the university's specific needs.
  - **RESPONSE: Agree** – The CSU will, as part of the requirement development phase of a project, consider the impact of current business processes on vendor selection before procuring information technology solutions or software in the future in those situations that industry best practice would suggest warrant such a review.

- RECOMMENDATION: To ensure that it provides ready access to current, accurate and complete administrative information and the means to use this information effectively as well as to establish standards to share information for common reporting purposes, the university should:
- Determine how it could improve the design of CMS to report system-wide information, and establish a minimum level of functionality that all campuses must implement to facilitate this reporting.
  - **RESPONSE: Agree** –The CSU will evaluate the need for improvements in system-wide reporting and define the minimal level of functionality that all campuses must implement to facilitate such system-wide reporting.

- RECOMMENDATION: To ensure that it adequately addresses CMS project quality and information security, the university should:
- Establish a quality management plan and continue its efforts to establish an effective quality assurance function for the CMS project.
  - **RESPONSE: Agree** – The CSU will continue to plan and establish an effective quality assurance function for the CMS project.

- Consider hiring an independent oversight consultant to perform various quality assurance functions and to evaluate the progress of the CMS project.
  - **RESPONSE: Agree** – The CSU will evaluate the need for an independent consultant to supplement the comprehensive oversight functions already performed through the CSU's established information technology advisory structure.

- Establish a policy on sensitive information requiring that campuses implement the use of confidentiality agreements for all employees with access to the CMS system.
  - **RESPONSE: Agree** – The CSU will establish a policy on sensitive information requiring that campuses implement the use of confidentiality agreements for all employees with access to the CMS system, as has been the traditional CSU practice of handling sensitive information. Security is of prime concern with the CMS project. The CSU will continue to address security issues and develop solutions that provide optimal protection of individual and institutional information.

- RECOMMENDATION: To ensure that it uses recommended practices in its future procurements, the university should:
- Plan project procurements to share risk with vendors and consultants, such as allowing them to propose their solutions and structuring contracts to protect the university's interests, including provisions to pay only after deliverables have been tested and accepted
  - **RESPONSE: Agree** – The CSU will continue to use risk sharing with vendors, as it did with the shared data center contract (Unisys), when circumstances are consistent with industry best practices and when marketplace conditions make such an approach feasible, appropriate, and cost effective.

Comments on Chapter 3 Findings

In the limited cases where some functionality may be less in PeopleSoft than in the replaced legacy system, the functionality will likely be regained in future software releases. These temporary occurrences are far outweighed by the overall functionality improvement across the system. The addition of a comprehensive human resources system where there was none is one major example of this fact. ECAR corroborated this fact in its "Enterprise Resource Planning Systems in Higher Education" stating "Many institutions reported losing functionality and momentum in the early stages of implementation, only to recover old functions and gain new ones as they mastered new technologies and business practices. The assumption that institutions will gain value from an ERP implementation as soon as the system is installed is misleading. Most systems don't reveal their value for several years. Not only must the institution go through a transition period, but many times business processes must be changed in order to reap the full benefits of the new systems." (ECAR Research Bulletin, Volume 2002, Issue 22, November 12, 2002)

Central CMS provides a variety of development and support functions for all three-project applications: finance, human resources, and student administration. These support functions are integral to project operations even without modification to the base software. They include planning, software review, software development, and implementation support for campuses. The software modification function is only one part of software development. The expenditures of $34 million through June 2002 include effort in all of these areas, all of which were required with or without CSU modifications to the PeopleSoft product.

The CSU identified seven business objectives when it began the CMS project. We expect to achieve each of those objectives and are well on the road to that achievement.

- Minimizing the cost to implement and maintain application software – The CSU's implementation of a single system-wide version of PeopleSoft significantly minimizes cost by reducing the implementation and maintenance effort from twenty-three stand-alone campus efforts to one coordinated effort. The CSU further minimized cost by limiting campus variations to the common application. Some system-wide modification would be required for any modern administrative system available on the market. Fewer modifications were required for the PeopleSoft software because of its flexible design. System-wide modifications were assumed to be necessary from the beginning, but have been carefully monitored and managed to further minimize cost. The CSU has managed the number of modifications required to meet our system and campus needs

to only 200, a level that we believe is far below industry averages for software modifications in Enterprise Resource Planning implementations. Furthermore, the CSU has managed to reduce the number of modifications over time as evidenced by the reduction of HR modifications from 100 to 75 during the recent software upgrade process.

- Minimizing the time to implement application software – It takes far less time for the university to implement one version of a single software package twenty three times than it would to separately develop, implement, and maintain twenty three separate applications.
- Adopting best practices or a foundation for best practice, where possible, during the implementation process – The CSU has maintained the focus on best practices throughout the development of the CMS project. Campuses have collaboratively redesigned business practices for the betterment of the university throughout the development and implementation.
- Establishing standards to share information for common reporting purposes – The CSU has established and is implementing standards for system-wide reporting. System-wide reporting begins with accurate campus data. Campuses are held accountable for providing consistent and accurate data to meet system-wide reporting. This methodology continues to provide campuses with autonomy while assuring that system-wide reporting can be done on a consistent and comparable basis.
- Promoting multi-campus cooperation and collaboration – CMS was initially conceived as several multi-campus collaboratives. The objective of multi-campus cooperation and collaboration was not only to minimize time and cost to implement software, adopt best practices, establish standards, and leverage limited resources, but also to capitalize on and develop the resources available on individual campuses across the system. CMS embraced and expanded on these same objectives through its system-wide implementation.
- Leveraging limited resources – The CSU is leveraging its limited resources to provide a modern, comprehensive and integrated administrative management system to each campus. Campuses provided staff time and expertise to develop and share business processes as an integral part of the CMS development. Campus staff continues to provide guidance to the central CMS effort. Campuses agreed to contribute funding to the central project through "off-the-top" assessments to fund a single development effort in lieu of multiple development efforts. The CSU developed a single data center to provide the needed technological support for the application software. A central CMS group was formed that guided the development to a common standard for all campuses. The development of such a comprehensive system would not have been fiscally possible without this leveraging.
- Providing ready access to current, accurate, and complete administrative information and the means to use it in an efficient manner – Campuses implementing CMS have realized the ready access envisioned in the beginning of the project. CMS already provides campuses better access to higher quality, more accurate data. Students have access to their own personal and academic data. Faculty and staff have better access to personal data and to data required to do their jobs. Managers have access to data to effect better decision making. CMS provides for commonly defined data in common formats that facilitate effective reporting on campuses and system-wide.

Chapter 4 – CMS PROCUREMENT

- RECOMMENDATION: To ensure that it uses recommended practices in its future procurements, the university should:
- Use the procurement process appropriate to the procurement objective. If the procurement objectives change during the process, it should restart the procurement using the appropriate process or formally modify the procurement process through appropriate written notification to potential vendors.
  - **RESPONSE: Agree** – The CSU will continue to use processes appropriate to the objectives of its procurements including restart and re-bid of procurements when conditions so warrant.

- Establish a practice of using quantitative scoring to demonstrate clearly that it followed an objective evaluation process to identify a best-value vendor. It also should document the resolution of evaluation team concerns to demonstrate it considered and appropriately addressed or mitigated these concerns.
  - **RESPONSE: Agree** – While the CSU did not use a weighting process for the application software procurement, it is the CSU's general practice to utilize weights and scoring to identify best value as evidenced by the data center selection process. The applications software selection process considered each vendor against pre-stated selection criteria. Only two vendors, PeopleSoft and SCT met the minimum criteria. After extensive consideration of each vendor's capabilities with regard to the pre-stated criteria, it was ultimately determined that PeopleSoft best satisfied those criteria. The CSU will further review its procedures for the resolution and documentation of concerns arising during evaluation processes.

- Enforce its policy that prohibits the use of sole source contracts when multiple vendors or consultants are available to provide the goods or services.
  - **RESPONSE: Agree** – The CSU makes every effort to apply and manage sole sourcing consistent with law and policy. In retrospect the University could have done a better job of applying the sole-source policy in some of the CMS procurement efforts. Nevertheless, we believe the results achieved were appropriate. The CSU gained value through providing the best possible consulting at a reasonable price.

- Establish a policy to require the solicitation of at least three offers for its pre-qualified vendor goods and consultant services master agreements.
  - **RESPONSE: Agree** – The CSU will require campuses to solicit at least three offers for its pre-qualified multiple-award master agreements.

Comments on Chapter 4 Findings

The CSU believes that the decision to continue the procurement process for applications software was appropriate when the evaluation committee determined to select only one applications software vendor. At the time of the selection process, there were only two qualified vendors that could potentially meet the CSU requirements for an integrated suite of management software for higher education. Even today, the market for an integrated suite of human resources, finance, and student systems is limited to the same two vendors. Restarting the process would not have brought more vendors to the table or changed the vendors' product offerings or pricing. The vendors were aware throughout the process that the final outcome could be a single vendor solution since the criteria said "one or more" vendors would be selected. Even the vendors contemplated one award and had already provided their best offers for a system-wide implementation.

The choice of PeopleSoft was a long-term process. While a "CMS campus participation survey", done early in the process, indicated a preference for one vendor over another, it was before complete information was known about the capabilities of the vendors. When more was known, there was a clear change in thinking on the part of most of the campuses that yielded the final outcome. The selection of application software was a long and thorough process and the CSU re-evaluated vendors and options as the project progressed. In the early stages, more was known about SCT since some campuses were on the SCT/IA products. Early opinions were based more on vendor familiarity that on any informed assessment of vendor characteristics.

The selection of PeopleSoft was based on a variety of factors including cost. As in other ERP's in higher education, cost was not the highest-ranking factor. Other selection factors are of equal or greater importance such as feature/functionality best-fit requirements, architecture best fit with IT strategy/goals, the vendor's reputation, and the vendor's ability to provide a complete solution. While initial acquisition cost was a factor in the CSU's selection process for application software, there were other equally or more important factors such as life cycle cost, flexibility and usability.

Chapter 5 – DATA CENTER

- RECOMMENDATION: To ensure that it continues to receive improved service levels from the data center vendor, the university should continue to monitor the data center services and promptly take action to resolve problems with the vendor, including problems in meeting service levels or providing and maintaining appropriate and sufficient facilities, equipment and staff throughout the life of the contract.
  - **RESPONSE: Agree** – The CSU will continue to monitor the performance of its data center and take appropriate and prompt action to assure appropriate service levels.

- RECOMMENDATION: To ensure that it provides CMS campuses with the means to effectively and efficiently store and retrieve data needed for useful management reporting, the university should expedite the CMS data-warehousing project and include the CMS related costs of campus data warehousing in its CMS project costs.
  - **RESPONSE: Agree** – While there is no current CMS data warehousing project, there is a data warehousing study under way to look at one option for data warehousing. The CSU will evaluate whether the inclusion of data warehousing within the scope of CMS is the best solution. If it is, then costs will be included within CMS.

Comments on Chapter 5 Findings

The CSU appreciates the auditors focus on data warehousing, however it is important to reemphasize that data warehousing was not included within the scope of the CMS project. It was considered in the early development of the project, but was deferred in order to focus on the priorities of development of the operational applications. The CSU will assess how to best respond to campus and system needs for data warehousing. Solutions may range from campus-centric to centralized data warehousing designs. The current CMS data center environment, while not providing a data warehousing capability, does provide for optimum data storage, retrieval and reporting in support of the application functions.

Chapter 6 – CONFLICT OF INTEREST

- RECOMMENDATION: The Legislature should consider the following to ensure that the university takes appropriate action to prevent potential conflicts of interest in the future:
- Require the university to provide designated university employees with periodic ethics training similar to that required for designated state employees by Government Code, Sections 11146 through 1146.4.
  - **RESPONSE: Agree** - Should the legislature so require, the CSU will of course comply.

- Require the university to establish an incompatible activities policy for university employees similar to that addressed in Government Code Section 19990, for state employees.
  - **RESPONSE: Agree** - California law currently regulates CSU incompatible activities. The CSU will distribute a comprehensive review of the law that governs CSU related incompatible activities. Should the legislature desire to enact a further expression, the CSU will of course comply. In fact the CSU is actively supporting related legislative action. Pending legislation supported by the CSU requires employees with outside employment to report that employment on an annual basis. This legislation would help make sure we are aware of any potential conflicts in the future with all the individuals that make decisions on services, programs and related areas for our students.

- RECOMMENDATION: To ensure that it adequately addresses potential conflicts of interest and prohibited use of nonpublic information, the university should:

- Conduct periodic conflict-of-interest trainings, such as the ethics training required of state agencies, for designated employees to inform those in decision-making positions about required disqualification when potential conflicts of interest exist. This training should provide employees guidance on using the FPPC's eight-step process as well as their responsibility to seek the advice of counsel.
  - **RESPONSE: Agree** – The CSU will periodically provide conflict of interest training to its campus filing officers and other administrative personnel. It will also continue to provide the FPPC Form 700 with instructions to its designated personnel annually and answer any questions. The CSU will increase its training efforts.

- Establish an incompatible activities policy that it formally communicates to employees.
  - **RESPONSE: Agree** – Enactment of an incompatible activities policy such as that appropriate to civil service employees in GC 19990 will eclipse the need to administratively establish such a policy. The CSU will communicate the current requirements under California law regarding incompatible activities and will communicate and comply with any enacted legislation addressing CSU incompatible activities.

- Require all employees to sign disclosure statements before participating in the procurement process.
  - **RESPONSE: Agree** – The CSU will require all employees to sign disclosure statements before participating in the procurement process.

- Enhance its disclosure form to indicate clearly what constitutes a conflict of interest, list all vendors participating in the procurement as they are known, and state that evaluators are prohibited from using nonpublic information to benefit personally.
  - **RESPONSE: Agree** – The CSU will enhance its disclosure form to clearly indicate what constitutes a conflict of interest and state that evaluators are prohibited from using nonpublic information to benefit personally. Where possible, all vendors participating in the procurement will be listed on the disclosure form. In addition, the CSU will ensure that all participants understand the scope of the procurement activity and the nature of the commitments made when signing the form prior to participating in a procurement activity.

- Update its conflict-of-interest code to classify all positions responsible for evaluating or overseeing vendors or contractors.
  - **RESPONSE: Agree** – The CSU will continue to update and apply its conflict of interest code and designation of positions to reflect changes in decision-making responsibilities.

- Require consultants that serve in a staff capacity and that participate or influence university decisions to file Form 700s.
  - **RESPONSE: Agree** – Consistent with existing policies, the CSU will require consultants to complete Form 700 when the consultants are hired to make or participate in making decisions that foreseeably will have a material effect in a personal financial interest.

- Remind human resources personnel of their responsibility to collect, retain, and make available the filed Form 700s for the required seven-year period.
  - **RESPONSE: Agree** – The CSU will remind human resources personnel of their responsibility to collect, retain, and make available the filed Form 700s for the required seven-year period.

- Remind employees of the prohibition against using information not available to the public to benefit financially, and discipline infractions if necessary.
  - **RESPONSE: Agree** – The CSU will remind designated employees of their rights and responsibilities under the conflict of interest code. The Chancellor has directed the Vice Chancellor for Human Resources to review any issues related to conflict of interest.

Comments on Chapter 6 Findings

The CSU believes that its employees behaved appropriately and in accordance with policy and that there were no improprieties. The CSU has sought to comply with Conflict of Interest law, policies and procedures. Positions have been added to and amended on the list of designated positions when it was believed that those positions warranted inclusion and amendment. Staff have completed and submitted Form 700 conflict of interest statements. In the physical relocation of the Chancellor's Office, some older filings were misplaced, but generally records have been conscientiously kept.

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COMMENTS

California State Auditor's Comments on the Response From the California State University

To provide clarity and perspective, we are commenting on the response to our audit from the California State University (university). The numbers correspond with the numbers we have placed in the university's response.

1. Although the university contends it is completing the Common Management System (CMS) implementation within its original budget estimates, on pages 40 through 45 we discuss how the university's updated cost projections for the CMS project exceed initial cost estimates and that these initial cost estimates did not include all related costs. Further, later in its response, on page 166, the university states that it projected implementation costs of $350 million to $400 million over seven years when the project began. However, as we note on page 40, it could show us no documentation to support these estimates.

2. The university indicates that the business case for CMS was compelling given that its prior administrative systems were aging, no longer meeting campus needs, and losing vendor support. On pages 30 through 35, we analyze these and other reasons cited by the university for implementing CMS. Although there is some degree of merit to the reasons, neither individually nor collectively do they justify proceeding with CMS without developing and documenting a business case that establishes the problem being solved as well as the expected benefits and associated costs to achieve those benefits.

3. The university states that cost-benefit analyses and feasibility studies are not as valuable or necessary when only one course of action is available. However, a feasibility study was necessary to determine if, in fact, only one course of action was available. Further, it was necessary to determine the most cost-effective method to implement the selected alternative. For example, the university could have prepared a cost analysis comparing the cost of developing, implementing, and maintaining one or a few databases with the cost to develop, implement, and maintain distinct databases at each campus (but one) as is currently planned. As indicated on page 21, had the university conducted

a feasibility study that mirrored the requirements of the State Administrative Manual (SAM), it would have conducted an economic analysis of each alternative considered and identified reasons for rejecting those not selected. Absent such an analysis, it is unclear how the university determined that today's CMS project represents the most cost-effective replacement strategy.

Further, although the university contends that it was spending $100 million on faltering administrative systems, it is unclear whether the $100 million figure cited by the university reasonably represents the university's true cost to maintain the systems that were replaced by CMS. On page 24, we used the same data as the university and prepared an alternative analysis that indicates the annual cost to maintain these prior systems was approximately $43 million. Similarly, as we note on page 36, information provided by the university to the Legislature suggests that it spent roughly $42 million annually to maintain these systems.

- The university states that the system and each implementing campus determined potential cost and developed a financial plan to manage the implementation. However, as we discuss on pages 59 through 61, the university does not have a systemwide funding plan for the project. Further, as we state on page 67, our funding survey of campuses revealed that only seven of 23 campuses were able to provide a funding plan that identified funding sources for their projected CMS costs.

- Although the university contends that fewer modifications were required for the PeopleSoft software, as we discuss beginning on page 84, the university did not sufficiently evaluate its specific business processes before purchasing the software. Although we recognize that some business process evaluation would need to take place after procurement, it could have performed a substantial amount of this evaluation to better understand how its business processes fit the software products it was considering and which software products would require modification to meet its business needs. Failing to do so, the university had no basis to anticipate the extent of software modifications it would eventually make or the lost functionality some campuses would experience.

- Although the university's assertion that it takes less time to implement one version of a single software package 23 times than it would to separately develop, implement, and maintain 23 separate applications makes conceptual sense on the surface,

it implies more commonality than currently exists with the university's CMS project. As we discuss on page 75, with one exception, the university has been installing and maintaining separate and distinct databases for campuses that must be tested separately at each campus. Moreover, as we state on page 76, the university did not define at the beginning of the CMS project what specific functionality comprised CMS, and it has not established a minimum level of functionality that campuses are required to implement systemwide. Thus, implementing the CMS software throughout the university is resulting in a wide variation in functionality across campuses. This lack of uniformity increases the overall costs to implement and maintain the CMS software and limits its usefulness in producing systemwide reports.

- Although individuals at each campus may have better access to higher quality, more accurate data, it is important to recognize that, as we discuss on page 86, the university will continue to use processes that existed before CMS to produce systemwide reports because it did not design CMS to replace these processes. Not achieving the full potential from installing a single university-wide suite of administrative software can be traced to the university's conscious decision to limit this capability.

- The university states that vendors were aware throughout the process that the final outcome could be a single vendor selection since the criteria said "one or more" vendors would be selected. However, as we discuss on page 99, the university's request for qualifications (RFQ) document did not provide for a scoring method to select a single vendor. Instead, the RFQ provided for an evaluation to qualify vendors to participate in subsequent phases. Further, although the university asserts that its selection of PeopleSoft considered other factors that it believes are equally or more important than initial acquisition costs, the university's evaluation process never established the relative importance of the factors that the university may have considered to select a single vendor. Instead, as we discuss on page 100, the university's evaluation document simply placed positive and negative comments into plus and minus categories, and we could not tell whether one factor carried more weight than another.

- The university states that it is important to reemphasize that data warehousing was not included within the scope of the CMS project. However, as we discuss on page 119, although the university later removed data warehousing from the scope of the CMS project, data warehousing was originally included within

the scope of the CMS project charter. The university's senior director for the CMS project explained that the university eliminated data warehousing from the scope early in the project and believes the university made it a campus responsibility largely because of concerns about CMS project resources.

cc: Members of the Legislature
Office of the Lieutenant Governor
Milton Marks Commission on California State Government Organization and Economy
Department of Finance
Attorney General
State Controller
State Treasurer
Legislative Analyst
Senate Office of Research
California Research Bureau
Capitol Press

California State Auditor

BUREAU OF STATE AUDITS

California State University

Common Management System

Presentation by

California State Auditor

Joint Legislative Audit Committee
Informational Hearing

April 3, 2003

This presentation document is only intended to outline selected portions of Report 2002-110, *California State University: Its Common Management System Has Higher Than Reported Costs, Less Than Optimal Functionality, and Questionable Procurement and Conflict-of-Interest Practices* (March 2003). For a more complete explanation of the points outlined in this document, refer to the report.

AUDIT SCOPE

- ❏ Review the Common Management System (CMS) project and identify the initial cost estimates and current projected costs.
- ❏ Review such costs as system integration costs, consultant costs, data center costs, and the university funding sources for these related expenditures.
- ❏ Identify the university's needs, benefits, and return on investment from CMS and its supporting data center.
- ❏ Review the university's management and oversight for CMS and the data center.
- ❏ Review the process used to select hardware, software, and consultants.
- ❏ Identify how implementation has affected growth in employee positions and workload.

AUDIT HIGHLIGHTS

- ☑ The university did not establish a business case for CMS to define its intended benefits and associated costs and ensure that the expenditure of university resources is worthwhile.

- ☑ The university's previous cost projections understated the full costs of CMS over its now nine-year project period. Costs include an estimated $393 million in one-time costs and $269 million for maintenance and operations for a total of $662 million. (Nine-year period is fiscal year 1998-99 through 2006-07.)

- ☑ The university has not established a mechanism to monitor overall systemwide costs adequately, contributing to a lack of complete project cost information for university management and the Legislature.

- ☑ The university lacks a systemwide funding plan for the CMS project.

- ☑ Problems exist that cast doubt on whether CMS will achieve all the objectives intended. The university plans to continue to use existing processes for systemwide reports because it did not design CMS to replace these processes.

- ☑ CMS software procurement process raises questions about whether the university used a fair and objective competitive process. The university decided late in the process to recommend one software vendor but did not use a process to objectively select between two finalists.

- ☑ Although the university followed recommended practices to acquire data center services, its procurements for software and consultants on the project raise questions about the fairness and competitiveness of the university's practices.

- ☑ The university did not do enough to prevent or detect apparent conflicts of interest on CMS-related procurements.

THE UNIVERSITY DID NOT ESTABLISH A BUSINESS CASE FOR THE CMS AND ITS DATA CENTER

Originally Anticipating Significant Savings From CMS and the Data Center Consolidation Initiatives, the University's Expectations for Both Efforts Changed

In September 1996, the university's executive director of the integrated technology strategy initiative, currently the CIO, made a presentation to the board's committee on technology utilization and described CMS as an initiative "with the aim of achieving significant cost savings that can be redirected to other information technology investments." The university's current CIO also informed the board's committee that a feasibility study would be conducted in the fall of 1996; however, this study was never performed.

In an October 2002 letter to us the university clarified the goal by stating that "the implementation did not have savings as a primary goal, rather it was expected that the implementation would result in cost avoidance or minimized costs for improved and expanded administrative software services over the long term."

No Feasibility Study Conducted

Public Contract Code (PCC) requires state agencies to follow the State Administrative Manual (SAM) when acquiring IT goods and services. SAM procedures include a need and cost-benefit analysis. However, the university is exempt from certain state oversight and approval of its IT procurements. Further, the university believes that the PCC exempts it from following SAM even though the statute requires the university to adopt policies and procedures that further the legislative policy.

Regardless of the applicability of SAM feasibility study procedures, the university would have been in a stronger position to answer questions concerning the need for CMS if it had established a business case.

A feasibility study would have:

- Described the business problem or opportunity that CMS and its data center were addressing.
- Provided a description of the hardware, software, and personnel to be involved in the project.
- Included an economic analysis of the life-cycle costs and benefits of the project and the costs and benefits of the current method of operation during the life cycle of the project.
- Identified the source of funding for the project.

The university cannot rely on the IBM study or the Pacific Partners study as business cases for CMS and its data center. The IBM study was not designed to evaluate the existing administrative systems and did not conclude the university should replace them. In fact, IBM recognized that the university needed to conduct additional cost-benefit analyses to develop a sound business case for informed decisions regarding CMS.

The Pacific Partners study was limited to identifying experiences of other organizations that consolidated data centers. Pacific Partners also recognized that the university needed to evaluate data center costs in more detail. It told the university that one of the most important actions going forward was a feasibility/implementation study that looked at the full life-cycle costs.

Ironically, the university created a financial analysis tool that might have helped it make the business case but it *did not require* campuses to use the tool. The tool provided the structure for each campus to compare projected costs of maintaining the current systems with the costs of installing and maintaining a new system over the next five years.

The University Cannot Support the Assertion That It Had Severe Problems With Its Administrative Systems

In its "Why CMS ?" document, the university failed to document the severity of the problems or their pervasiveness across campuses.

> In this document, the university lists software problems such as eroding vendor support and increased maintenance costs. However, the university was not able to identify specific meetings or any documentation to suggest that numerous campuses expressed a desire to replace administrative systems at that time.

The university cannot support the assertion that most of its campuses were planning to replace administrative systems in July 1999. When it began the RFQ process in early 1997, the university indicated that ***only 6*** campuses planned to replace their ***financial systems, 6*** planned to replace ***human resources***, and only ***2*** were replacing ***student administration systems***.

THE UNIVERSITY IS LIKELY TO SPEND MORE, NOT LESS, TO MAINTAIN AND OPERATE ITS NEW SOFTWARE

Table 2 shows that prior to CMS, campuses spent approximately $40 million to operate and maintain its systems and the chancellor's office spent about $1.4 million. However, the university projects that CMS maintenance and operations costs will exceed $65 million annually by fiscal year 2006-07.

CSU subsequently questioned the validity of the $40 million it estimated for maintenance and contends that it was spending $100 million on faltering administrative systems. However, we used the same data as the university and prepared an alternative analysis that indicates the annual cost to maintain these prior systems was approximately $43 million.

THE UNIVERSITY'S PROJECT COSTS EXCEED INITIAL ESTIMATES AND COST MONITORING PROCEDURES ARE NOT ADEQUATE

Recent Estimates for CMS Exceed Initial Cost Estimates, Which Did Not Include All Costs

In June 1999 (nine months after it purchased the PeopleSoft software), the university estimated that CMS costs would total $440 million. In June 2002, the university estimated costs were nearly $482 million, a $42 million increase.

Also, it is important to note that until we requested cost information in June 2002, the chancellor's office had not gathered project cost data from the campuses.

The university's cost estimate did not include costs for maintenance and operations as well as in-kind costs. It excluded these costs from the estimate because they are not "new costs."

The university's June 1999 estimate did not include about $180 million in campus costs because its focus was only on new costs. Adding the $180 million for maintenance and operations and in-kind costs increases the estimate from $482 million to $662 million. (See Table 3)

It should be noted that the accuracy of these figures is uncertain because 73 percent of the projected $662 million is estimated costs. Further, the cost figures cover nine years with only four years of actual data included, which accounts for $176 million out of the $662 million it projects to spend. (See Table C.1)

Also, future costs are uncertain because in-kind costs are especially hard to estimate. Campuses were instructed to report only the costs for staff spending more than 50 percent of their time on CMS in a given month. Also, some campuses are further along in implementation than others and campuses may choose the level of functionality they want, which will affect cost per campus. (See Figure 1)

The University Expects to Spend More Than $296 Million in Personnel Costs and $167 Million for Consultants Through Fiscal Year 2006-07

The university plans to use consultants extensively through implementation and then transition to university personnel after staff has developed the necessary skills on CMS.

Figure 2 shows that costs for personnel and consultants represent 45 percent and 25 percent of total projected costs, respectively.

Through fiscal year 2001-02 the university has spent $43 million on personnel costs and nearly $56 million on consultants. Actual and total projected costs for personnel and consultants are shown on Tables C.1 and C.2.

Consultants at the chancellor's office have worked on various tasks including developing and coding the modifications to the PeopleSoft software deemed necessary to meet the university's needs.

Consultants at the campuses have worked on specific projects such as integrating existing campus systems into CMS, reengineering the university's business processes to fit CMS better, and in a few instances maintaining CMS at smaller campuses.

Tables D.1 and D.2 show actual and projected costs for consultants at the chancellor's office and the 23 campuses, respectively.

The University Expects to Spend $78 Million Through Fiscal Year 2006-07 on Data Center Costs

Costs include $3.7 million because of failed negotiations with IBM and the need for a contingency data center, $4 million for telecommunications, and more than $70 million to Unisys, its data center provider.

The university originally selected IBM for its data center contract; however, neither side was able to negotiate a final contract. Correspondence explains that the reason for failed negotiations was irreconcilable differences in pricing and scope for the project.

In March 2001 the university entered into a contract with Unisys for the data center services.

THE UNIVERSITY HAS NOT MONITORED SYSTEMWIDE COSTS ADEQUATELY

The university lacks a process to gather and monitor campus costs. The university tracks central project costs but does not track campus costs because it believes those costs are the responsibility of each campus.

The university has not been reporting a clear picture of the project's costs to the Legislature.

> For example, in its November 2002 report, the university reported the CMS project budget for fiscal years 2000-01 and 2001-02 as being $30 million and $31 million, respectively; however, it did not report campus costs, which totaled $29 million and $47 million for those two fiscal years.

The chancellor's office does not use status reports that track cost variances nor track CMS costs by development, implementation, and ongoing maintenance.

As a result, it has been unable to provide us the accurate amount spent for developing modifications to the software or the ongoing amount for central CMS maintenance.

CMS budget forecast documents do not provide an approved initial project budget that the chancellor's office can use to compare against actual and projected CMS costs. Instead budget forecast documents simply report the funding the chancellor's office has allocated or expects to allocate.

ALTHOUGH THE UNIVERSITY DOES NOT HAVE A COMPREHENSIVE FUNDING PLAN, MOST EXPENDITURES ARE SUPPORTED BY THE UNIVERSITY GENERAL FUND

The CMS Project Charter of 1999 lists a comprehensive systemwide cost and funding plan as a critical factor to the project's success. However, we found that the funding plan only addresses expected expenditures at the chancellor's office and excludes campuses' funding needs.

CMS implementation at campuses accounts for 63 percent of the project's overall costs, yet the "systemwide" CMS funding plan does not consider campus funding needs for CMS. Rather, the chancellor's office expects campuses to determine on their own the costs and funding necessary to implement CMS.

Recently, the university began to see the importance of having campus cost data and funding information when it began collecting this data in response to our audit.

The Chancellor's Office Is Funding Its Share of CMS Costs Through Its General Fund

The chancellor's office plans to fund the entire $236 million it plans to spend on CMS from its general fund.

- Table C.2 shows CMS project costs by type and campus.
- Figure 5 shows the funding sources, including 31 percent of its costs being supported by "off the top" assessments of all campuses.
- The annual assessments represent funding that otherwise would have been passed from the chancellor's office to the 23 university campuses during the annual budget allocation. Annual assessments have been $10 million to all campuses collectively.

Campuses CMS Expenditures Have Been Supported Primarily by the University General Fund

Table 6 shows that campuses have relied heavily on their general fund accounts to fund CMS costs through 2002.

- In fact, approximately 85 percent of expenditures through June 30, 2002, have been supported through campus general funds. Campuses can spend general fund revenue for a variety of purposes, including such items as salaries, instructional materials, and administrative costs.

Table 7 shows projected expenditures through 2006-07 and most campuses plan to again use general fund money to support CMS. However, our survey of the campuses revealed that only 7 of the 23 campuses were able to provide us with a funding plan that identified funding sources for projected costs.

CMS MAY NOT ACHIEVE ALL OF ITS BUSINESS OBJECTIVES NOR ALL THE POSSIBLE BENEFITS OF A SYSTEMWIDE SOFTWARE PROJECT

OBJECTIVES:

- Minimize costs to implement and maintain application software.
- Minimize time to implement application software.
- Establish standards to share information for common reporting purposes.
- Provide ready access to current, accurate, and complete administrative information and the means to use it in an effective manner.

Initial Versions of the Software Required About 200 Modifications to Meet the University's Business Needs

The university has made more than 100 modifications to the initial version of the human resources software, more than 50 to the finance software, and 40 to the student administration software.

Often, modifications must then be reapplied each time PeopleSoft releases a new version of the CMS software, adding costs to reapply, test, and implement the modifications.

Because the university did not track the hours spent working on modifications, it does not know the costs associated with these efforts.

The University Has Not Implemented CMS in a Manner That Will Maximize Systemwide Reporting

The university is not installing shared databases.

The university has been installing separate and distinct databases for all campuses except Sonoma and the Maritime Academy. As a result, each campus's database must be individually maintained and tested.

Functionality will vary across campuses.

- The university has not established a minimum level of functionality that campuses are required to implement statewide.

- Most campuses have not implemented and are not planning to implement all the modules or sub-modules purchased under the PeopleSoft agreement. (See Table 8)

- Variability can exist within each functionality element as well.

  For example, although all campuses have implemented or plan to implement a general ledger functionality element, the extent of functionality could vary by campus.

- The university is conducting or planning more than 20 unique implementations of the software, which will increase the cost to implement the system.

Systemwide Reporting Processes Will Remain Substantially Unchanged After CMS Is Implemented

- The university cannot use CMS, as the university designed it, to produce systemwide reports.

- Currently, to prepare systemwide reports, campuses extract the necessary data from each of their electronic information systems. When the chancellor's office receives the data, it uses other systems to manipulate and summarize the data into a format that allows systemwide reports.

- Under CMS, this reporting process will remain substantially unchanged. The only difference is that CMS will be the source of the data as opposed to previously existing information systems.

Some Campuses Have Lost Some Functionality

One campus must now manually perform some functions and enter the results into CMS that its prior system had performed automatically. (Example: calculating and withholding taxes from employees and out-of-state vendors.)

The CMS Project Has Encountered Other Problems in Work Quality and Information Security

Between October 2001 and November 2002, the university distributed to campuses three releases each of the CMS software applications, totaling nine application releases. However, it had to redistribute two within weeks of their initial distribution because of errors in the initial release.

- The university distributed 80 updates or fixes to the human resources application but had to redistribute 14. Similarly, it distributed 175 updates or fixes to the student administration application but had to redistribute 20.

The University has not addressed its information security needs for CMS.

- A search feature in the PeopleSoft software apparently allows employees access to confidential information of other employees and students. Specifically, the search feature allows employees to access students' and employees' full Social Security numbers, dates of birth, and gender information.

- Rather than reapply a prior modification to resolve the problem, the university implemented a policy on "sensitive" information, which would place the responsibility for privacy on employees by requiring them to sign confidentiality agreements before getting access to the system. However, the university did not establish a policy requiring that all campuses implement the use of confidentiality agreements.

Likewise, the university did not ensure that the CMS software provided adequate password management, such as enforcing minimum password length, requiring frequent password changes, revoking the password after five failed log-in attempts, and not allowing reuse of previously used passwords.

WEAK INITIAL PLANNING AND LIMITED REPORTING EXPECTATIONS HAVE LED TO QUESTIONS ABOUT WHETHER THE PROJECT WILL ACHIEVE ITS BUSINESS OBJECTIVES

- The university did not sufficiently evaluate its business processes before the procurement.

  Thorough evaluations of its business processes before it purchased the software would have helped the university make an informed decision about what software product would fit its needs best and be the least costly to install.

- Maximized systemwide reporting was not an intended benefit.

  It was a conscious decision on the part of the university to continue to use existing processes for systemwide reports rather than design CMS to replace these processes.

- The university did not establish an effective quality assurance function.

  After more than three years of designing, developing, and implementing CMS, the university only recently began establishing a quality assurance group.

THE UNIVERSITY'S PROCUREMENT APPROACH DID NOT SHARE PROJECT RISK WITH VENDORS AND CONSULTANTS

The university's procurement of the software for the CMS project resulted in agreeing to pay PeopleSoft $33 million for the right to use the software for the next eight years, and for an initial amount of training and consulting services. The contract was amended to $37 million for additional software products and maintenance.

The university then hired consultants on an hourly basis to help identify campus business needs, design and develop the modifications needed for the software and to help implement the software at campuses throughout the university system.

The university could have structured its procurement so that, in return for a fixed fee the winning firm would be primarily responsible for the successful implementation of whatever software product the university decided to use. The university could have entered a contract that paid the firm only upon completion of key deliverables, such as the modification of functionality elements.

The university also did not share risk when it procured consultants to assist in modifying and implementing the software. The chancellor's office and the campuses typically pay consultants on an hourly basis rather than for the delivery of accepted work products.

PROCESSES THE UNIVERSITY USED TO SELECT THE SOFTWARE VENDOR AND CONSULTANTS DID NOT CLEARLY DEMONSTRATE BEST-VALUE PROCUREMENTS

The University's Selection of the CMS Vendor Was Problematic

When the objective of the CMS software procurement changed from selecting one or more vendors to selecting one vendor, the university continued with the procurement process even though its solicitation document did not provide for a method to select only one vendor.

The original intent was to identify one or more vendors to provide integrated systems that included financial, student, and human resources services. These vendors could then be selected by one or more campus collaboratives for their respective campuses.

In April 1997 the university issued a solicitation document, a request for qualifications that planned for a process to select one or more vendors for one or more collaboratives. In July 1997 the university qualified three vendors to proceed to the next procurement phase.

However, in April 1998, during the final stages of the procurement, the university decided to select a single software vendor. In September 1998 the university executed its contract with PeopleSoft. In December 1998 the university determined that all 23 campuses would implement CMS in five to seven years.

Not Restarting or Formally Modifying the Procurement Process When the Methodology Was No Longer Compatible With Its Objectives Raises Questions

The university's procurement process was not geared initially to identify a single vendor.

When deciding to select only one vendor, the university needed an evaluation process that demonstrated it objectively surfaced the best-value vendor, considering both quality of the vendors' proposal and costs associated with the vendors' offers.

However, the university did not restart the process by issuing a new RFQ, nor did it modify the process by notifying the potential vendors that it was changing the overall process outlined in the RFQ. Instead it simply proceeded with an evaluation process to select a winning vendor.

Although one evaluation team performed some scoring, the RFQ did not provide a scoring method to select a single vendor. The university did not use a weighted scoring process to select a best-value vendor.

The University Could Not Show That It Resolved Evaluation Teams' Concerns About Potential Vendors and Discounted Some Information Favoring the Vendor Not Chosen

The university could not provide documentation to show how it resolved, mitigated, or acknowledged acceptance of risks associated with concerns evaluation teams raised about any of the vendors being considered.

Especially problematic is the fact that the university could not demonstrate that it addressed serious concerns the student administration function team raised about PeopleSoft.

The university also discounted a survey of the campuses, which shows that 13 campuses indicated a high interest in another vendor, Systems and Computer Technology Corporation, while only three indicated a high interest in PeopleSoft.

The university could not show how it determined that cost differences between the competing vendors were immaterial

THE UNIVERSITY'S SELECTION OF CMS PROJECT CONSULTANTS IS TROUBLESOME AND DOES NOT ENSURE BEST VALUE

PeopleSoft Was Effectively Hired As a Sole-Source Contractor

The university effectively hired consultants from PeopleSoft without competition. Although the original contract provided for initial training and consultant time, the chancellor's office entered into a second contract with the vendor for additional consulting services.

When qualifying consultants to provide services for the CMS project, the university did not require PeopleSoft to go through the same process as the other firms it considered.

Hiring Io Consulting as a Sole-Source Contractor Was Questionable

In April 1999, the university hired Io consulting as a sole-source contractor. The initial contract was for the services of one individual. The chancellor's office stated in its justification for the sole source contract that it needed the specific expertise of one individual in the firm.

However, the contract expanded significantly from a $350,000 sole-source contract for one consultant to a contract totaling $5.1 million for the services of nine additional individuals. The university issued a total of seven contract amendments from April 1999 to June 2001. (See Figure 7)

When Io Consulting's sole-source contract was not extended further, it continued to work under an arrangement with KPMG. In July 2001, Io consulting began working as a subcontractor for KPMG on the CMS project.

In November 2001 the university executed a three-year master agreement with Io Consulting and as of October 2002, Io had earned an additional $1.7 million at the chancellor's office alone.

Campuses Selected Consultants From University Master Agreements Without Ensuring That They Received the Best Value

The chancellor's office established groups of master service agreements in 1999 in which 7 consulting firms were selected and again in 2001 when an additional 15 firms were selected.

These master agreements only provide ceiling labor rates and campuses may negotiate more favorable rates to reflect campus requirements. However, some campuses did not solicit offers from more than one consultant and therefore cannot demonstrate that they selected the best-value consultant.

DATA CENTER SERVICES HAVE IMPROVED BUT DATA WAREHOUSING NEEDS REMAIN

DATA CENTER PROCUREMENT FOLLOWED RECOMMENDED PRACTICES

Unlike the CMS procurement, the university did use recommended procurement practices to select the outsourced data processing services needed to run CMS.

The university conveyed its needs to potential vendors asking them to propose solutions.

The university used an objective selection process with weighted criteria to evaluate potential vendors. The university further detailed each criterion into factors that evaluation team members scored individually on a scale from 0 to 5.

The university negotiated a contract that shares risk with the vendor. Contract provisions allow the university to assess penalties on an escalating scale should the vendor fail to meet specified service levels.

- The data center has not always provided the level of service required by the contract, but service has improved in recent months. From October 2001 through June 2002 the data center met the required service level only once; however, during July 2002 through November 2002 it met service levels for three out of five months.

THE UNIVERSITY MUST ADDRESS NEEDS FOR CMS WAREHOUSING

The university is only now starting to address campus CMS data warehousing needs. Also, because the chancellor's office considers data warehousing a campus responsibility, it has not included the cost associated with CMS data warehousing as a central cost of the CMS project.

Data warehousing facilitates the cost-effective storage of data for very long periods of time. The data then can be used to conduct various business analyses, such as producing reports that reflect historical trends. Data warehousing also provides the potential to integrate CMS data with data from other systems to produce even more sophisticated analyses and management reports.

Originally the university recognized the need for data warehousing for CMS and included it within the project's scope but eliminated it in April 2002.

The university is now working on a fee-for-service arrangement with a voluntary consortium of campuses to address data warehousing needs. The chancellor's office is working on a pilot project currently funded by the chancellor's office to design and develop a data warehousing model for campuses. It expects to release its final version of the data warehousing model in early 2003.

THE UNIVERSITY'S OVERSIGHT 0F POTENTIAL CONFLICTS OF INTEREST NEEDS IMPROVEMENT

The university did not do enough to detect or prevent conflicts of interest by decision makers for CMS-related procurements.

The university's conflict-of-interest code left out some university positions that should have been designated for filing annual Form 700s. Further, it did not always retain and make available certain required filings of these forms.

- Some campus CMS project directors with significant decision-making authority were not designated to file Form 700s.

- The Political Reform Act requires the university to retain original filings of Form 700s for seven years but the chancellor's office and campuses could not locate these forms in a number of cases. (We requested 244 forms for 63 employees but did not receive 39 forms.)

The university did not require consultants on the project to file Form 700s, although they performed duties similar to employees in designated positions.

- Consultants assisted in evaluating responses on the CMS data center procurement. Also, one consulting firm was used to provide management services for the data center procurement on an ongoing basis and appears to have participated in making governmental decisions.

- The university hired the principal consultant from Io Consulting as a project manager and did not require him to file a Form 700. This consultant was responsible for managing and directing contract and university staff and had the duty of communicating and presenting the project's status to relevant parties and groups.

The university could not provide signed disclosure forms for many participants in the CMS software procurement. Individuals signing disclosure forms are certifying that they have no personal or financial interests incompatible with their participation in the procurement process.

University lacks a policy that spells out for employees what constitutes "incompatible activities," such as accepting anything of value from anyone seeking to do business with the university and does not require that employees in designated positions receive regular ethics training.

The university stated that it does not have an incompatible activities policy because statutes and the state constitution spell out the incompatible activities, and current statutes no longer require the university to have such a policy.

The university also does not require its employees to receive ethics training regularly. The university asserts it is exempt from state requirements that employees receive such training.

The university cites Education Code Section 66606.2, which states the Legislature intends that the university not be governed by any statute enacted after January 1, 1997, that does not amend a previously applicable act, unless the statute expressly provides that the university is to be governed by that statute.

FORM 700s INDICATE A UNIVERSITY EMPLOYEE HAD AN APPARENT CONFLICT OF INTEREST

A University Senior Executive Who Participated in the CMS Software Procurement Received Income From PeopleSoft

The CMS software procurement took place between April 1997 and September 1998, and this senior executive received income from the bidder for facilitating meetings periodically from 1996 through 1998.

The senior executive reported more than $10,000 of consulting fees and between $1,001 and $10,000 in travel reimbursements for 1996. For 1997 and 1998, he reported between $1,001 and $10,000 for facilitating meetings in addition to travel payments of $4,400 and $2,900, respectively.

The senior executive asserts that his role in the CMS procurement process did not include the selection of the vendor because he recused himself from meetings in which decisions were made. However, while the senior executive may not have participated in the final meeting, we did find that he participated in key activities related to the vendor's selection.

Another University Senior Executive May Have Tried To Use Nonpublic Information for Financial Benefit

A senior executive reportedly purchased stock in a company one day before the university executed the contract with that company. According to the individual's Form 700, the senior executive purchased between $10,001 and $100,000 of the stock

The senior executive has a high-ranking management position whose responsibilities included overseeing information technology services that support the chancellor's office.

RECOMMENDATIONS

- Adopt policies and procedures that require a feasibility study before the acquisition and implementation of significant future information technology projects.

- To measure the benefits achieved through common management and business practices, the university should establish quantitative measures of increased business process efficiencies through CMS, in addition to any qualitative factors being assessed.

- Monitor systemwide costs adequately, including establishing a mechanism to collect data on campus costs periodically. Also, it should establish a systemwide funding plan for CMS that includes campuses.

- To ensure that it adequately addresses CMS project quality and information security, the university should establish a quality management plan and continue its efforts to establish an effective quality assurance function of the CMS project.

- Take steps to ensure that it meets its business objectives for the CMS project. Determine how it could improve the design of CMS to report systemwide information.

- Collect comprehensive cost information annually, including in-kind, upgrades, and integration costs.

- Compare project costs to approved project budgets and publish the information in its quarterly status reports.

- Use recommended practices, such as ensuring that it shares project risk with vendors and consultants such as allowing them to propose their solutions and structuring contracts to protect the university's interests, including paying only after deliverables have been tested and accepted.

- In future procurements, the university should evaluate its specific business processes against vendor products before procurement, then select vendors that best accommodate the university's specific needs. In addition, establish a practice of using a quantitative evaluation method to identify a best-value vendor.

- Strengthen its procedures for preventing and detecting conflicts of interest for individuals participating in procurement decisions. Conduct periodic ethics training for designated employees and establish an incompatible activities policy that it formally communicates to employees.

- ⇨ Update its conflict-of-interest code to classify all positions responsible for evaluating or overseeing vendors or contractors.

- ⇨ Require consultants that serve in a staff capacity and participate or influence university decisions to file Form 700s.

- ⇨ Remind human resources personnel of their responsibility to collect, retain, and make available the filed Form 700s for the required seven-year period.

TABLE 2

Comparison of Annual Maintenance and Operations Costs Between Prior Administrative Systems and CMS

	Actual Pre-CMS Annual Maintenance and Operations Costs (fiscal year 1999–2000)	Projected CMS Annual Maintenance and Operations Costs (fiscal year 2006–07)	Increase (Decrease)
Chancellor's office	$ 1,380,000*	$29,346,376	$27,966,376
Combined campuses	40,340,730†	35,760,740	(4,579,990)
Total annual maintenance and operations costs	**$41,720,730**	**$65,107,116‡**	**$23,386,386**

Source: The university's November 2000 *Measures of Success* report; the university's June 2002 cost survey.

* The director of business management services estimated that the chancellor's office spent this amount supporting administrative systems that were subsequently replaced by CMS.

† This amount only reflects maintenance and operations costs reported by the 22 campuses in existence at the time. Channel Islands' annual maintenance and operations costs are reflected in fiscal year 2006–07, amounting to $73,158. Chancellor's office "campus" costs, representing the cost of maintaining and operating human resources and finance applications at the chancellor's office, are also included in fiscal year 2006–07, amounting to $779,300.

‡ This amount includes the projected ongoing costs to maintain and operate the version of CMS that would exist in fiscal year 2006–07. However, it does not reflect the costs for upgrades or additional development efforts that the CMS software may require in the future.

TABLE 3

A Comparison of the 1999 and 2002 CMS Project Cost Estimates for the Nine-Year Project Period

Cost Item	June 1999 Cost Estimate	June 2002 Cost Estimate	Estimate Growth or (Shrinkage)
Central Costs:			
Personnel	$ 26,735,486	$ 73,714,004	$46,978,518
Training and Travel		5,144,228	5,144,228
Consultants	70,840,335	31,264,032	(39,576,303)
Hardware	400,000	1,313,555	913,555
Data Center*	75,000,000	75,176,426	176,426
Software		4,126,357	4,126,357
PeopleSoft Software	34,876,961	39,876,812	4,999,851
Other	1,757,000	5,800,515	4,043,515
Central Costs Total	**209,609,782**	**236,415,929**	**26,806,147**
Campus Costs:†			
Personnel	110,400,000	74,374,321	(36,025,679)
Training and Travel	23,575,000	21,869,074	(1,705,926)
Consultants	85,100,000	127,679,650	42,579,650
Hardware and Software	10,925,000	15,214,506	4,289,506
Other		6,236,258	6,236,258
Campus Costs Subtotal	**230,000,000**	**245,373,809**	**15,373,809**
Subtotals	**$439,609,782**	**481,789,738**	**$42,179,956**
Other Campus Costs:‡			
In-Kind		63,378,034	
Maintenance and Operations		116,714,146	
Total Project Costs		**$661,881,918**	

Source: The university's June 1999 implementation approach analysis document and June 2002 cost survey.

* The June 2002 cost estimate for the data center costs include other nonpersonnel costs of $728,683, outsourced data center costs of $70,223,133, and data center related telecommunications costs of $4,224,610.

† For its June 1999 estimate, the university estimated implementation costs of $10 million for one campus and extrapolated to $230 million for 22 campuses plus the chancellor's office "campus" costs. This estimate excluded campus in-kind costs as well as maintenance and operations costs. Further, although upgrade and integration costs are additional or new costs resulting from the CMS project, the university also excluded these from its 1999 estimate.

‡ The campus in-kind and maintenance and operations costs, which are shown separately on this table, are included in the various types of costs, such as personnel, shown in Figure 2. Thus, the individual cost items in Figure 2 and Table 3 are not comparable.

TABLE C.1

Summary of Actual and Projected Common Management System Systemwide Costs by Year From Fiscal Years 1998–99 Through 2006–07

Types of Costs	Actual 1998–99	Actual 1999–2000	Actual 2000–01	Actual 2001–02	Projected 2002–03	Projected 2003–04	Projected 2004–05	Projected 2005–06	Projected 2006–07	Projected Total Costs
Personnel	$ 606,092	$ 3,551,457	$13,164,359	$25,257,557	$39,474,266	$44,687,388	$ 54,324,844	$ 60,201,142	$55,365,310	$296,632,415
Training	712,375	623,684	1,212,306	2,728,382	3,348,674	3,479,362	3,358,458	2,742,716	1,238,778	19,444,735
Travel	155,852	714,751	692,635	734,364	1,487,243	1,511,009	2,495,701	2,354,722	1,061,590	11,207,867
Consultants	801,769	8,258,435	21,654,163	25,145,293	21,592,323	22,664,619	32,308,037	25,628,121	8,632,758	166,685,518
Hardware	293,511	227,533	9,068,302	17,172,445	15,503,303	12,466,757	10,783,791	10,098,288	9,954,589	85,568,519
Software	4,077,028	5,822,412	16,167,269	12,307,951	7,086,147	5,353,440	5,710,823	4,765,074	6,826,546	68,116,690
Other	181,506	478,040	1,278,204	2,443,468	2,530,898	1,977,672	1,765,354	1,892,866	1,678,166	14,226,174
Total Costs	**$6,828,133**	**$19,676,312**	**$63,237,238**	**$85,789,460**	**$91,022,854**	**$92,140,247**	**$110,747,008**	**$107,682,929**	**$84,757,737**	**$661,881,918**

Source: The university's June 2002 cost survey.

TABLE C.2

CMS Project Costs by Type of Cost and by Campus for Fiscal Years 1998–99 Through 2006–07

	Personnel Costs	Training Costs	Travel Costs	Consultant Costs	Hardware Costs	Software Costs	Other Costs	Projected Total Costs
Central*	**$ 73,714,004**	**$ 3,155,990**	**$ 1,988,238**	**$ 31,264,032**	**$76,489,981**	**$44,003,169**	**$ 5,800,515**	**$236,415,929**
Campus								
Bakersfield	3,919,590	202,094	145,648	3,204,173	178,226	627,784	186,286	8,463,801
Chancellor's Office†	4,620,400	235,500	4,000	1,682,100	90,400	27,835	53,000	6,713,235
Channel Islands	172,455	20,000		657,078	5,000	7,134		861,667
Chico	8,367,081	482,657	823,540	4,671,915	809,202	2,592,814	698,931	18,446,140
Dominguez Hills	10,020,000	1,370,000	340,000	1,470,000	200,000	144,800	285,000	13,829,800
Fresno	12,567,200	111,400	208,526	3,862,700	378,800	976,000	277,500	18,382,126
Fullerton	8,954,339	685,680	293,425	6,933,500	55,294	1,932,395	469,000	19,323,633
Hayward	8,541,966	511,100	678,500	7,620,670	287,700	284,400	571,290	18,495,626
Humboldt	6,512,882	953,587	435,694	2,982,423	186,000	125,139	447,139	11,642,864
Long Beach	19,271,579	897,218	398,374	10,469,009	1,518,218	3,502,747	1,050,983	37,108,128
Los Angeles	10,561,700	1,126,400	300,300	1,044,000	54,800	281,700	51,600	13,420,500
Maritime Academy		189,347	119,060	3,712,748	312,843	304,187		4,638,185
Monterey Bay	8,579,143	512,500	82,000	4,305,076	586,103	503,152	815,663	15,383,637
Northridge	8,491,406	589,560	222,238	7,389,894	180,000	1,224,520	121,211	18,218,829
Pomona	9,960,395	645,078	412,637	7,418,625	335,218	357,093	1,108,393	20,237,439
Sacramento	8,040,800	363,700	344,600	7,270,400	410,000	2,567,100	275,900	19,272,500
San Bernardino	7,295,863	93,669	118,654	9,043,831	179,575	3,014,656	162,736	19,908,984
San Diego	19,635,159	1,882,300	2,346,199	12,378,200		1,282,500	72,000	37,596,358
San Francisco	16,652,300	878,300	305,800	11,571,500	1,298,000	2,318,100	258,000	33,282,000
San Jose	7,023,753	2,176,000	289,169	4,514,933	140,679	1,153,043	166,625	15,464,202
San Luis Obispo	18,599,501	1,094,773	479,767	12,295,148	559,186	221,796	401,903	33,652,074
San Marcos	5,992,000	798,600	270,400	2,478,900	1,026,400	100,300	155,700	10,822,300
Sonoma‡	12,400,377	240,032	383,283	6,537,925	214,328	330,957	678,512	20,785,414
Stanislaus	6,738,522	229,250	217,815	1,906,738	72,566	233,369	118,287	9,516,547
Campus Costs	**222,918,411**	**16,288,745**	**9,219,629**	**135,421,486**	**9,078,538**	**24,113,521**	**8,425,659**	**425,465,989**
Total CMS Costs	**$296,632,415**	**$19,444,735**	**$11,207,867**	**$166,685,518**	**$85,568,519**	**$68,116,690**	**$14,226,174**	**$661,881,918**

Source: The university's June 2002 cost survey.

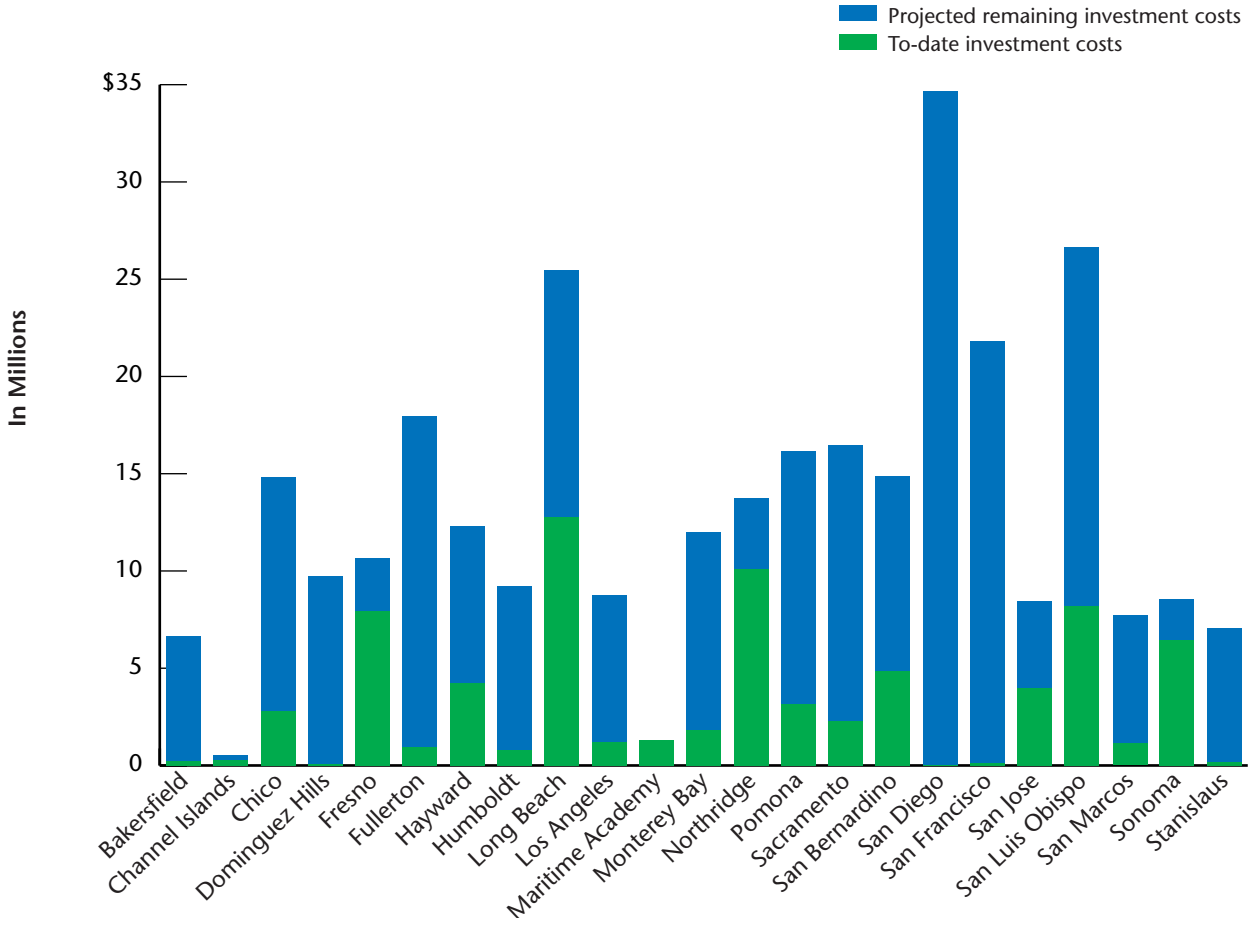
* Central costs are the centralized costs for the development, implementation support, and operation of CMS systemwide.

† Chancellor's office "campus" costs represent the cost of implementing human resources and finance applications at the chancellor's office.

‡ Subsequent to the June 2002 cost survey, the Sonoma campus informed us that $64,000 of its "other costs" represented costs similar to those we classified as personnel costs.

FIGURE 1

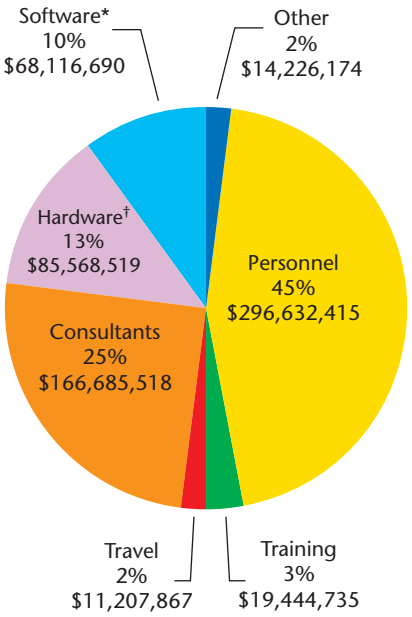
Campus CMS Implementation Status as of June 2002
Measured by Investment Costs



Source: The university's June 2002 cost survey.

FIGURE 2

Projected Total Costs for the CMS Project Including Maintenance and Operations Costs Fiscal Years 1998–99 Through 2006–07



Source: The university's June 2002 cost survey.

* Software costs include PeopleSoft software costs.

† Hardware costs include Unysis data center costs.

TABLE D.1

Chancellor's Office Central Consultant Costs

Consulting Firm	Actual Costs July 1998 Through June 2002	Projected Costs July 2002 Through June 2007	Projected Total Costs
PeopleSoft	$ 7,398,778	$ 137,308	$ 7,536,086
Not Yet Determined by Chancellor's Office		7,050,000	7,050,000
Cedar/Hunter Group	4,083,292	2,261,100	6,344,392
Io Consulting	5,662,907		5,662,907
KPMG Consulting*	1,506,417		1,506,417
Lewis & Co	713,129		713,129
Monarch Information Technology Systems	514,795		514,795
Aligne	352,508		352,508
IBM	318,110		318,110
BIT/Digiterra/Ciber	268,976		268,976
California State University, Fresno	225,812		225,812
4GL Solutions	130,800		130,800
Mercury Interactive	124,788		124,788
Vista IT	91,338		91,338
Reboot	83,750		83,750
Price Waterhouse	57,500		57,500
Sunset Data Services	40,000		40,000
John G. Kelly	39,414		39,414
International Management	35,480		35,480
Korn/Ferry International	30,750		30,750
Academe Solutions	26,437		26,437
Technical Connection	19,500		19,500
GTC Systems	19,409		19,409
Michael W. Dula, Ph.D	16,508		16,508
Epeople	16,250		16,250
Bea Systems	16,040		16,040
ITprolink	15,600		15,600
John Miller Information	4,800		4,800
Ampco Systems Parking	2,471		2,471
Adver Services	65		65
Total Chancellor's Office Central Consultant Costs	**$21,815,624**	**$9,448,408**	**$31,264,032**

Source: The university's June 2002 campus cost survey.

* The actual amount reflects $683,612 paid to firm for Io Consulting as a subcontractor.

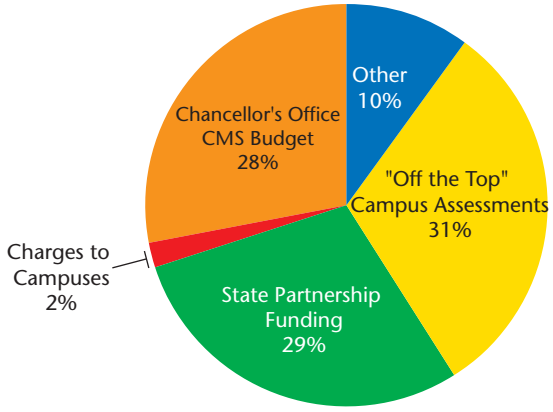
TABLE D.2

Campus Consultant Costs

Consulting Firm	Actual Costs July 1998 Through June 2002	Projected Costs July 2002 Through June 2007	Projected Total Costs
Not Yet Determined by Campus		$ 61,801,855	$ 61,801,855
Cedar/Hunter Group	$ 9,393,876	23,231,129	32,625,005
Io Consulting	9,826,229	10,803,655	20,629,884
KPMG Consulting	6,479,099		6,479,099
PeopleSoft	3,451,590	1,527,000	4,978,590
Price Waterhouse	2,003,023		2,003,023
Sonoma State University	297,919	1,100,000	1,397,919
Monarch Information Technology Systems	123,472	1,054,680	1,178,152
EQV Consulting	227,783	795,200	1,022,983
BIT/Digiterra/Ciber	746,612	160,000	906,612
Signature	314,152		314,152
Bennett (SDB)	50,000	250,000	300,000
Financial Aid Services		226,331	226,331
Hershey Business Systems	23,430	175,000	198,430
Informed Decision	137,241	11,500	148,741
Independent–Jacobson	136,200		136,200
Fugatt		124,600	124,600
Walt Patterson	105,800		105,800
Carrera-Maximus Consulting	105,700		105,700
CSLink Consulting		100,000	100,000
IBM Consulting	91,800		91,800
Provista	81,789	10,000	91,789
San Jose State University	91,500		91,500
Deloitte Touche	71,383		71,383
Independent-Miller	71,348		71,348
Sargent	67,500		67,500
Information Management Systems Consulting	50,000		50,000
Sunset Data	50,000		50,000
Prism Computing	15,000		15,000
Page Consulting	14,950		14,950
CMC	9,000		9,000
Sierra Systems		6,500	6,500
Orion	5,000		5,000
EPNL	2,400		2,400
Amelia Assoc-Citrix Consulting	240		240
Total Campus Consultant Costs	**$34,044,036**	**$101,377,450**	**$135,421,486**

FIGURE 5

Projected Chancellor's Office Central CMS Funding Sources Fiscal Years 1998–99 Through 2006–07



Source: The university's CMS budget forecast document (December 2002).

TABLE 6

University Campus Funding Sources for CMS Expenditures (July 1998 Through June 2002)

Campus	General Fund–General Support	General Fund–Information Resources and Technology	General Fund–Capital Outlay	Auxiliary Funds	Various University Trust Funds	Other Revenue Funds	Total Funding Reported	Total Expenditures Reported
Bakersfield	$ 386,455						$ 386,455	$ 386,455
Channel Islands	256,580						256,580	256,580
Chico	3,443,824					$ 1,067	3,444,891	3,444,891
Dominguez Hills	85,600						85,600	85,600
Fresno*	6,938,580		$469,635		$ 652,011		8,060,226	8,060,226
Fullerton	933,440						933,440	933,440
Hayward	5,059,187						5,059,187	5,059,187
Humboldt	813,242						813,242	813,242
Long Beach	13,204,585						13,204,585	13,204,585
Los Angeles	1,673,200						1,673,200	1,673,200
Maritime Academy	2,007,733						2,007,733	2,007,733
Monterey Bay*	409,576			$1,412,276			1,821,852	1,821,852
Northridge	5,242,297				5,239,266		10,481,563	10,481,563
Pomona	3,781,988						3,781,988	3,781,988
Sacramento	2,270,200						2,270,200	2,270,200
San Bernardino	5,032,514	$406,530					5,439,044	5,439,044
San Diego†								
San Francisco*	12,300	237,100					249,400	249,400
San Jose	2,485,235				2,335,586	95,068	4,915,889	4,915,889
San Luis Obispo	8,874,561						8,874,561	8,874,561
San Marcos*	1,140,200						1,140,200	1,140,200
Sonoma	6,496,734			815,093	523,459	483,054	8,318,340	8,318,340
Stanislaus	187,547						187,547	187,547
Totals‡	**$70,735,578**	**$643,630**	**$469,635**	**$2,227,369**	**$8,750,322**	**$579,189**	**$83,405,723**	**$83,405,723**
Percent	84.81%	0.77%	0.56%	2.67%	10.49%	0.70%		

Source: The Bureau of State Audits' October 2002 "CMS Funding Survey"; the university's June 2002 cost survey.

* Fresno, Monterey Bay, San Francisco, and San Marcos fund CMS costs through a pooled account that is supported by the applicable funds listed above for each campus. These figures may not represent actual funding sources for CMS at these campuses because the figures are based on the contribution percentages of these funding sources to the pooled account.

† No funding information is provided for the San Diego campus because it will not incur CMS implementation costs until after June 2002.

‡ The table does not include chancellor's office "campus" costs. These costs represent the cost of implementing the human resources and finance applications at the chancellor's office. For the period above, chancellor's office "campus" costs totaled $1,647,635. This amount was funded through "general fund–general support."

TABLE 7

Projected University Campus Funding Sources for CMS Expenditures (July 2002 Through June 2007)

Campus	General Fund–General Support	General Fund–Information Resources and Technology	Auxiliary Funds	Various University Trust Funds	Other Revenue Funds	Total Funding Reported	Total Expenditures Reported
Bakersfield	$ 8,077,346					$ 8,077,346	$ 8,077,346
Channel Islands	605,087					605,087	605,087
Chico	14,444,501				$ 556,748	15,001,249	15,001,249
Dominguez Hills	13,744,200					13,744,200	13,744,200
Fresno	10,165,750			$ 156,150		10,321,900	10,321,900
Fullerton*							18,390,193
Hayward†	13,436,439					13,436,439	13,436,439
Humboldt	10,829,622					10,829,622	10,829,622
Long Beach	23,903,543					23,903,543	23,903,543
Los Angeles	11,747,300					11,747,300	11,747,300
Maritime Academy	2,630,452					2,630,452	2,630,452
Monterey Bay‡							13,561,785
Northridge	7,689,766			47,500		7,737,266	7,737,266
Pomona	16,455,451					16,455,451	16,455,451
Sacramento	17,002,300					17,002,300	17,002,300
San Bernardino	12,645,127	$ 1,824,813				14,469,940	14,469,940
San Diego	37,596,358					37,596,358	37,596,358
San Francisco†	7,203,200	11,839,000				19,042,200	33,032,600
San Jose	9,410,103			804,440	333,770	10,548,313	10,548,313
San Luis Obispo	24,777,513					24,777,513	24,777,513
San Marcos	9,682,100					9,682,100	9,682,100
Sonoma	7,332,595		$1,120,395	2,824,284	1,189,800	12,467,074	12,467,074
Stanislaus	9,329,000					9,329,000	9,329,000
Totals§	**$268,707,753**	**$13,663,813**	**$1,120,395**	**$3,832,374**	**$2,080,318**	**$289,404,653**	**$335,347,031**
Percent	92.85%	4.72%	0.39%	1.32%	0.72%		

Source: The Bureau of State Audits' October 2002 "CMS Funding Survey"; the university's June 2002 cost survey.

* The Fullerton campus indicated it had yet to determine how its projected CMS costs would be funded; however, the campus estimates that at least 75 percent will come from the general fund, while other revenue sources such as parking, housing, and the university trust fund also may be used.

† The Hayward campus indicated that it may have to finance one-time CMS costs as necessary. The San Francisco campus indicated that it will finance the difference between its projected CMS expenditures and the funding reported above.

‡ The Monterey Bay campus declined to project how its future CMS expenditures would be funded; however, the campus estimates that the majority of costs will continue to be funded through the general fund. The campus also plans to obtain funding from auxiliary organizations.

§ The table does not include chancellor's office "campus" costs. These costs represent the cost of implementing the human resources and finance applications at the chancellor's office. For the period above, chancellor's office "campus" costs totaled $5,065,600. This amount was funded through "general fund–general support."

TABLE 8

Range of Functionality Elements Implemented by Campuses

	Number of Campuses	Number of Functionality Elements Implemented or Planned*
Human Resources Application†		
	1	41
	0	36 to 40
	6	31 to 35
	2	26 to 30
	4	21 to 25
	9	16 to 20
	1	11 to 15
	1	6 to 10
	0	1 to 5
Finance Application†		
	1	12
	3	9 to 11
	11	7 to 8
	5	5 to 6
	4	3 to 4
	0	1 to 2
Student Administration Application‡		
	1	22
	8	18 to 21
	4	14 to 17
	5	10 to 13
	4	6 to 9
	0	1 to 5

Source: The Bureau of State Audits' October 2002 Module Survey, which reflects the status of functionality elements as of June 2002.

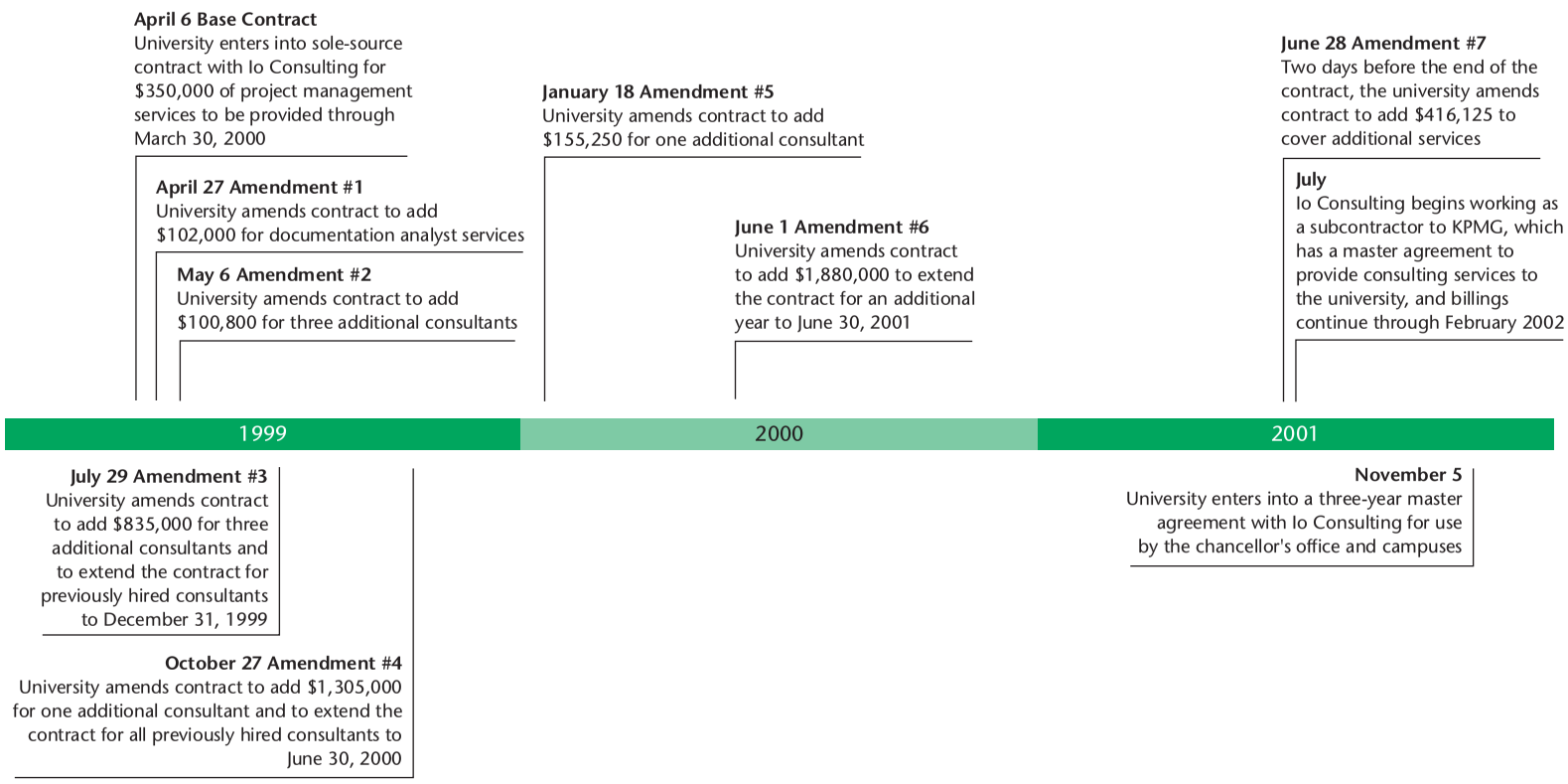
* Includes modules, sub-modules, and university-created functionality.

† Number of campuses equals 23 campuses plus chancellor's office (human resources and finance only).

‡ Channel Islands and chancellor's office did not plan to implement student administration as of the October 2002 survey.

FIGURE 7

Timeline of the University's Contracting With Io Consulting


April 6 Base Contract
University enters into sole-source contract with Io Consulting for $350,000 of project management services to be provided through March 30, 2000
April 27 Amendment #1
University amends contract to add $102,000 for documentation analyst services
May 6 Amendment #2
University amends contract to add $100,800 for three additional consultants
January 18 Amendment #5
University amends contract to add $155,250 for one additional consultant
June 1 Amendment #6
University amends contract to add $1,880,000 to extend the contract for an additional year to June 30, 2001
June 28 Amendment #7
Two days before the end of the contract, the university amends contract to add $416,125 to cover additional services
July
Io Consulting begins working as a subcontractor to KPMG, which has a master agreement to provide consulting services to the university, and billings continue through February 2002
1999
2000
2001
July 29 Amendment #3
University amends contract to add $835,000 for three additional consultants and to extend the contract for previously hired consultants to December 31, 1999
October 27 Amendment #4
University amends contract to add $1,305,000 for one additional consultant and to extend the contract for all previously hired consultants to June 30, 2000
November 5
University enters into a three-year master agreement with Io Consulting for use by the chancellor's office and campuses

Source: University contract and payment documents.

TABLE 4

Summary of Projected Total Costs by Project Area
Fiscal Years 1998–99 Through 2006–07

	Cost	Percent of Cost
One-Time Investment Costs		
Implementation	$291,349,354	44.0%
Integration	12,868,156	1.9
In-Kind*	63,433,034	9.6
Upgrade	24,957,016	3.8
Investment Total	392,607,560	59.3
Ongoing Costs		
Maintenance and Operations	269,274,358	40.7
Total†	**$661,881,918**	**100.0%**

Source: The university's June 2002 cost survey.

* The In-Kind costs, which include $55,000 of central costs, have been broken out as follows: Implementation $50,889,187, Integration $4,873,451, and Upgrade $7,670,396.

† Included in the total costs are $83,855,717 in investment costs and $152,560,212 in maintenance and operations costs incurred by the chancellor's office for its "central" efforts on the CMS project. The chancellor's office does not differentiate between investment and maintenance and operations costs when it accounts for its costs. Thus, it allocated its costs between these two areas based on when the campuses begin using each application.

TABLE B.1

Projected Total Central Costs and Campus Costs for Fiscal Years 1998–99 Through 2006–07

	Projected Total Investment Costs	Projected Total Maintenance and Operations Costs	Projected Total Costs
Central*	$ 83,855,717	$152,560,212	$236,415,929
Campus			
Bakersfield	6,611,545	1,852,256	8,463,801
Chancellor's Office†	3,321,300	3,391,935	6,713,235
Channel Islands	514,880	346,787	861,667
Chico	14,815,073	3,631,067	18,446,140
Dominguez Hills	9,710,000	4,119,800	13,829,800
Fresno	10,656,526	7,725,600	18,382,126
Fullerton	17,978,070	1,345,563	19,323,633
Hayward	12,303,668	6,191,958	18,495,626
Humboldt	9,235,829	2,407,035	11,642,864
Long Beach	25,448,554	11,659,574	37,108,128
Los Angeles	8,769,400	4,651,100	13,420,500
Maritime Academy	1,303,614	3,334,571	4,638,185
Monterey Bay	11,984,613	3,399,024	15,383,637
Northridge	13,717,868	4,500,961	18,218,829
Pomona	16,154,608	4,082,831	20,237,439
Sacramento	16,469,300	2,803,200	19,272,500
San Bernardino	14,869,265	5,039,719	19,908,984
San Diego	34,661,458	2,934,900	37,596,358
San Francisco	21,844,500	11,437,500	33,282,000
San Jose	8,419,218	7,044,984	15,464,202
San Luis Obispo	26,622,700	7,029,374	33,652,074
San Marcos	7,733,700	3,088,600	10,822,300
Sonoma	8,567,704	12,217,710	20,785,414
Stanislaus	7,038,450	2,478,097	9,516,547
Campus Costs	308,751,843	116,714,146	425,465,989
Total CMS Costs	**$392,607,560**	**$269,274,358**	**$661,881,918**

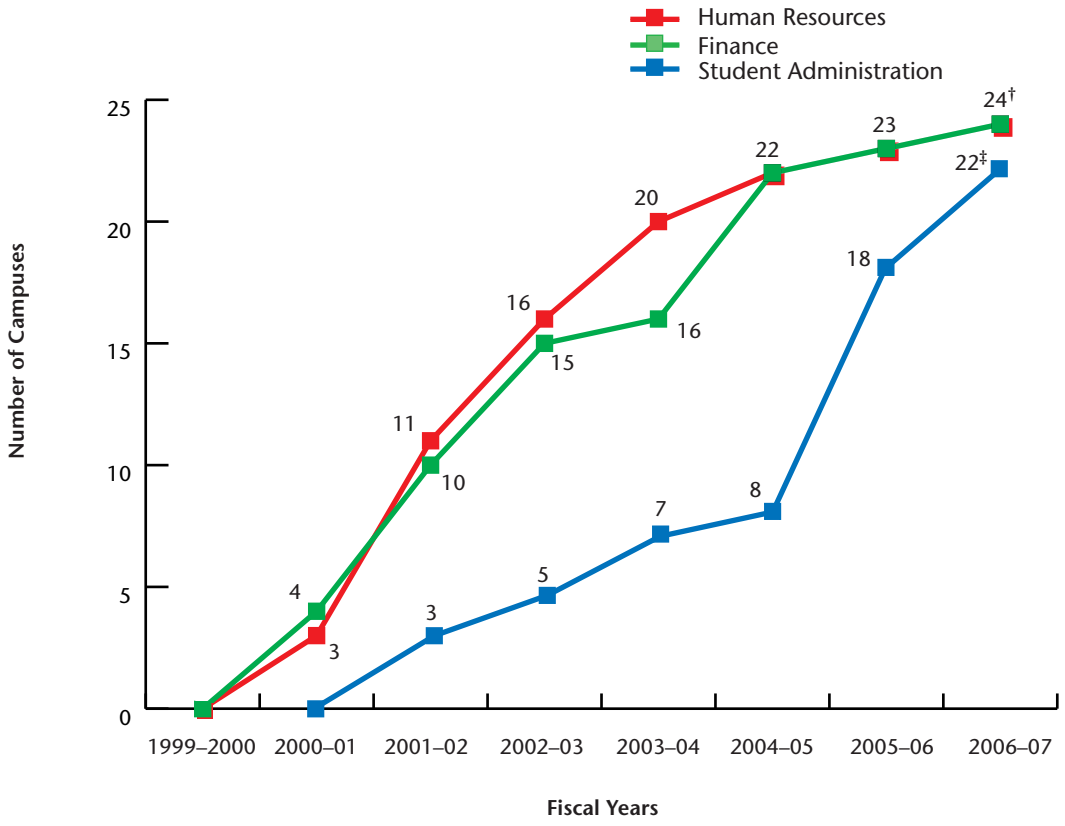
Source: The university's June 2002 cost survey.

* Central costs are the centralized costs for the development, implementation support, and operation of CMS systemwide.

† Chancellor's office "campus" costs represent the cost of implementing human resources and finance applications at the chancellor's office.

FIGURE 3

Number of Campuses "Live"* on CMS by Application



Source: CMS deployment timeline as of December 2002.

* "Live" means a campus has completed testing on at least some functionality of its initial version of the application, and is now using it in the day-to-day operation of the campus.

† Includes all 23 campuses and chancellor's office.

‡ Includes all campuses except Channel Islands.